

# Operating Instructions

## **SR4E4D01S**

### **Safety Relay Add-on Module**



EN



# Table of Contents

<b>1</b>	<b>Operating Instructions</b>	<b>3</b>
1.1	Function	3
1.2	Target Group	3
<b>2</b>	<b>Use for Intended Purpose</b>	<b>4</b>
<b>3</b>	<b>Safety precautions</b>	<b>5</b>
3.1	Safety Precautions	5
3.2	Warning Regarding Incorrect Use	5
3.3	Exclusion of Liability	5
3.4	General Information on the Product	5
<b>4</b>	<b>Technical Data</b>	<b>6</b>
4.1	General Data	6
4.2	Sensor Connection	7
4.3	Housing Dimensions	8
4.4	Control Panel	8
4.5	Complementary Products	8
<b>5</b>	<b>Installation and Electrical Connection</b>	<b>9</b>
5.1	Installation	9
5.2	Electrical Connection	9
5.3	Connection Example	9
5.4	Internal Circuit Diagram	10
<b>6</b>	<b>Initial Start-Up</b>	<b>11</b>
6.1	Function Test	11
<b>7</b>	<b>Maintenance Instructions</b>	<b>12</b>
<b>8</b>	<b>Removal</b>	<b>13</b>
<b>9</b>	<b>Proper Disposal</b>	<b>14</b>
<b>10</b>	<b>Declarations of Conformity</b>	<b>15</b>

# 1 Operating Instructions

## 1.1 Function

- These operating instructions provide the necessary information for installation, initial startup, safe operation and disassembly of the safety relay module.
- The operating instructions must always be kept in legible condition and made accessible.

## 1.2 Target Group

- All work described in these operating instructions may only be carried out by trained specialist personnel authorized by the plant operator.
- Only install and commission the device if you have read and understood the operating instructions and are familiar with applicable regulations on work safety and accident prevention.
- The selection and installation of the devices, as well as the integration of their controls, require the machine manufacturer to have qualified knowledge of relevant laws and normative requirements.

## 2 Use for Intended Purpose

### **Safety Relay Add-On Module**

The add-on modules for use in safety circuits are intended for installation in control cabinets. They are used to reliably evaluate the signals of a safety evaluation unit suitable for the application and their safe contact multiplication.

## 3 Safety precautions

### 3.1 Safety Precautions

- These instructions are an integral part of the product and must be kept on hand for the entire duration of its service life.
- Read the operating instructions carefully before using the product.
- Installation, initial start-up and maintenance of the product may only be carried out by qualified personnel.
- Tampering with or modifying the product is impermissible.
- Protect the product from contamination during initial start-up.
- The safety instructions given in the operating instructions must be followed, as must the country-specific installation requirements and regulations on safety and accident prevention.

### 3.2 Warning Regarding Incorrect Use

- **If used improperly or for purposes other than those intended, or in the case of manipulation, use of the safety relay module may result in hazards to people and damage to the machine or system components.**
- **Please also note the information on this in standards ISO 14119 and EN ISO 13850.**

### 3.3 Exclusion of Liability

- No liability is assumed for damage and malfunction resulting from installation errors or non-observance of these operating instructions.
- The manufacturer assumes no further liability for damage resulting from the use of spare parts or accessories not approved by the manufacturer.
- No unauthorized repairs, modifications and alterations are permitted for reasons of safety. If carried out, the manufacturer assumes no liability for any resulting damage.
- The module is only to be operated in the closed housing, i.e., with the front cover mounted.

### 3.4 General Information on the Product

- The function is defined as the opening of releases 13-14, 23-24, 33-34 and 43-44 when supply voltage A1-A2 is switched off.
- The safety-relevant current paths with output contacts 13-14, 23-24, 33-34 and 43-44 meet the following requirements, taking the PFH value into account:
  - Category 4 – PL in accordance with DIN EN ISO 13849-1
  - Complies with SIL 3 in accordance with DIN EN 61508-2
  - Complies with SILCL 3 in accordance with DIN EN 62061
- All relevant components must be considered in order to achieve the performance level (PL) from EN ISO 13849-1 for the overall safety function (e.g., sensor, logic, actuator).
- **This device is intended as an output expansion. The safety function is only achieved with connection to the basic module. For this, the device must be connected according to the suggested circuit.**

## 4 Technical Data

### 4.1 General Data

Technical Data	
<b>Electrical Data</b>	
Temperature range	-25...60 °C
Storage temperature	-40...85 °C
Supply voltage	20.4...28.8 V DC 20.4...26.4 V AC
Input wiring	1-, 2-channel
Response time	Typ. 30 ms / max. 45 ms
Fall time	Typ. 25 ms / max. 35 ms
Clearances and creepage distances (EN 60664-1)	4 kV/2 (basic insulation)
Power consumption	< 1 VA
Frequency range	50 Hz/60 Hz
Fuse	F1: T 1.0 A / 250 V
Utilization category (EN 60947-5-1)	AC-15: 230 V AC / 6 A DC-13: 24 V DC / 6 A
<b>Safety Output</b>	
Safety output	NO
Number of safety outputs, Stop 0	4
Safety output switching current (250 V)	6 A
Safety output fuse, Stop 0	External ( $I_k = 1000$ A) in accordance with EN 60947-5-1 8 A fast, 6 A slow
<b>Auxiliary Output</b>	
Auxiliary output	NC
Number of auxiliary outputs	2
Auxiliary output switching current (24 V DC)	2 A
Auxiliary output fuse	External ( $I_k = 1000$ A) in accordance with EN 60947-5-1 2.5 A fast, 2 A slow
<b>Mechanical Data</b>	
Material	Plastic, glass-fiber reinforced
Contact material	AgSnO, self-cleaning, positively driven
Mounting	Quick mount for standard rail DIN EN 60715
Degree of protection	IP20 (terminals), IP40 (housing), IP54 (mounting space)
Weight	215 g
Connection type	Pluggable screw terminal
Terminal tightening torque	0.6 Nm
Service life	10 million switching cycles
Clampable wire cross-section	0.25...2.5 mm <sup>2</sup>
Connection line	Rigid or flexible
Vibration resistance	10...55 Hz, amplitude: 0.35 mm
Shock resistance	10 g / 11 ms

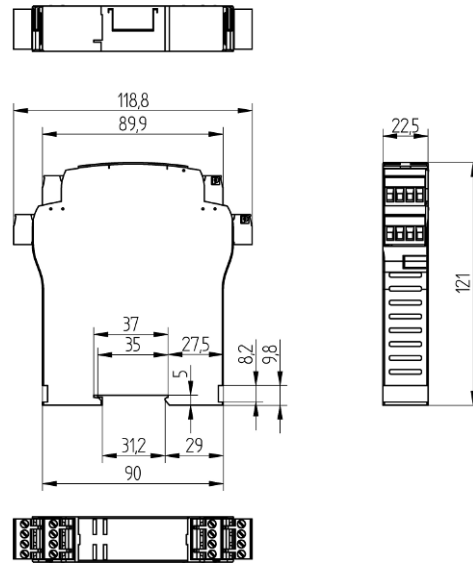
Technical Data	
Technical Safety Data	
Safety category (EN ISO 13849-1), Stop 0	Up to 4
Performance level (EN ISO 13849-1), Stop 0	To PL e
Safety integrity level (EN 61508), Stop 0	Up to SIL 3
Mission TM (EN ISO 13849-1)	20 a
Diagnostic coverage (DC)	99%
Common cause failure (CCF)	> 65 points
B10d switching cycles, mechanical (20% load)	20,000,000
B10d switching cycles (40% load)	7,500,000
B10d switching cycles (60% load)	2,500,000
B10d switching cycles (80% load)	1,000,000
B10d switching cycles (100% load)	400,000

## 4.2 Sensor Connection

21

PIN	Function	In/Out
A1	24 V DC	
A2	0 V DC	
13-14	Safety Enabling Circuit 1	Out
23-24	Safety Enabling Circuit 2	Out
33-34	Safety Enabling Circuit 3	Out
43-44	Safety Enabling Circuit 4	Out
51-52	Auxiliary Contact 1	Out
61-62	Auxiliary Contact 2	Out
X1-X3	Feedback Circuit	Out

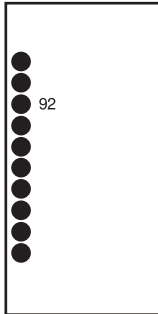
## 4.3 Housing Dimensions



Dimensions specified in mm (1 mm = 0.03937")

## 4.4 Control Panel

SR3



---

92 = channel 1/2

## 4.5 Complementary Products

wenglor offers you the right connection and mounting technology as well as other accessories for your product. You can find this at [www.wenglor.com](http://www.wenglor.com) on the product details page at the bottom.

# 5 Installation and Electrical Connection

## 5.1 Installation

## 5.2 Electrical Connection

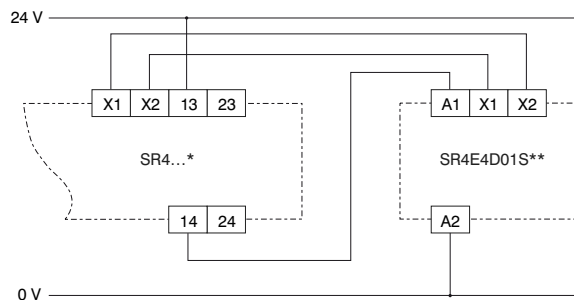
Electrical connection is only permissible in a de-energized state and must be carried out by authorized, trained personnel.

With regard to electrical safety, the contact protection for connected and electrically interconnected equipment, as well as the insulation for supply lines, must be designed for the highest voltage occurring on the device.

To avoid EMC disturbances, the physical environment and operating conditions at the product's installation location must comply with the electromagnetic compatibility (EMC) section of DIN EN 60204-1.

## 5.3 Connection Example

- Single-channel control at terminal A1 on expansion module SR4E4D01S by means of a basic module safety release.
- Terminals X1 and X2 of the expansion module must be connected to the feedback loop or single-button circuit of the basic module.
- **Safety note: The expansion module must be connected according to the suggested circuit. The safety function is only achieved with this connection to the basic module.**



\* Basic module

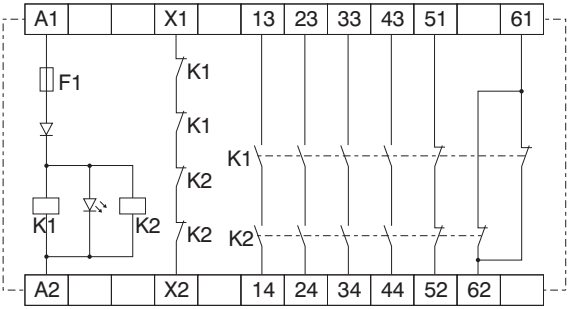
\*\* Add-on module



### NOTICE

Example illustration! The terminal designation of the basic module may vary depending on the type used. Please also note the description of the basic module!

# 5.4 Internal Circuit Diagram



## **6 Initial Start-Up**

### **6.1 Function Test**

The safety function of the safety relay must be tested. The following must be ensured in advance:

- Tight fit
- Cables must be correctly routed and connected
- Check output expansion housing for damage

# 7 Maintenance Instructions

We recommend performing a visual inspection and a function test at regular intervals including the following steps:

- Check safety relay for secure fit
- Check supply line for damage
- Check electrical connection

**The device must be included in the regular inspections in accordance with the Industrial Safety Regulation (BetrSichV), however, at least 1× annually.**

**Damaged or defective devices must be replaced.**

## 8 Removal

The safety relay module may only be removed in a de-energized state.  
Press the bottom of the housing upward and unhook it by tilting slightly forward.

## 9 Proper Disposal

wenglor sensoric GmbH does not accept the return of unusable or irreparable products. Respectively valid national waste disposal regulations apply to product disposal.

# 10 Declarations of Conformity

Declarations of conformity can be found on our website at [www.wenglor.com](http://www.wenglor.com) in the product's separate download area.

## EU Konformitätserklärung EU Declaration of Conformity (DoC)



Name und Anschrift des Herstellers / Name and address of manufacturer:

wenglor sensoric GmbH  
wenglor Straße 3  
88069 Tettang / GERMANY  
Phone: +49 7542 5399 0  
Email: [info@wenglor.com](mailto:info@wenglor.com)

Diese Erklärung gilt für das folgendes Produkt: This declaration applies to the following product:

### SR4E4D01S

Wir bestätigen die Übereinstimmung mit den grundlegenden Anforderungen der Europäischen Richtlinien

We confirm compliance with the essential requirements of the European Directives

Richtlinie / Directive

Fundstelle / Reference

EMV / EMC 2014/30/EU

Amtsblatt / Official Journal L96 29.03.2014

Niederspannung / Low Voltage 2014/35/EG

Amtsblatt / Official Journal L96 29.03.2014

RoHS 2011/65/EU

Amtsblatt / Official Journal L174 01.07.2011

Folgende Norm wurde angewandt:

The following standard has been used:

EN 60947-5-1:2017

Produkt-Beschreibung

Product description

Sicherheits-Relais Erweiterungsmodul

Safety Relay Add-on Module

Klaus Epple ist bevollmächtigt, die technischen Unterlagen zusammenzustellen.

Klaus Epple is authorized to compile the technical documentation.

Diese Erklärung stellvertretend für den Hersteller wird abgegeben durch:

On account of the manufacturer, this declaration is given by:

Dipl.-Ing. ETH Rafael Baur  
Geschäftsführender Gesellschafter / Owner and General Manager  
Email: [rafael.baur@wenglor.com](mailto:rafael.baur@wenglor.com)

Tettang, 28/05/2024  
Place Date

Signature

wenglor sensoric GmbH · wenglor Straße 3 · 88069 Tettang · GERMANY · [www.wenglor.com](http://www.wenglor.com)



	UL-Ratings:	Main-Output
	US LISTED 382E	230VAC / 8A
	IND.CONTEQ	24VDC / 8A
	Use Copper Conductors Only, Use 60°C / 75°C Conductors	B300, R300
Use No. 28-12 AWG Wire Size Only, Tightening Torque 5 lb in.		