

Safety Technology



Instruction manual
Interface relay SR-0

EG - KONFORMITÄTSERKLÄRUNG

EC Declaration of Conformity

Déclaration de conformité CE

Wir bestätigen für das folgende Produkt:

We confirm for the following product:

Nous confirmons pour le produit suivant:

Schnittstellenrelais

Interface relay

Relais d'interface

Typ / Type / Type:

SR-0

die Übereinstimmung mit den europäischen Richtlinien:

the conformity to the European directives:

la conformité aux directives européennes:

- **Maschinenrichtlinie 2006/42/EG**
Machinery Directive 2006/42/EC
Directive Machines 2006/42/CE
- **EMV-Richtlinie 2004/108/EG**
Directive on electromagnetic compatibility 2004/108/EC
EMC-Directive 2004/108/CE
- **Niederspannungsrichtlinie 2006/95/EG**
Low Voltage Directive 2006/95/EC
Directive Basse tension 2006/95/CE

Urbach, 13. November 2014



Stefan Eisemann
Geschäftsführer
Managing Director
Gérant d'affaires

Stand entspricht Ausstellungsdatum
Änderungen vorbehalten

Interface relay SR-0

Installation, use and maintenance

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 This symbol indicates an important personal safety warning. Failure to comply with the warning may result in very high risk for exposed personnel.

INTRODUCTION

The SR-0 is an accessory device for the interconnection of a photoelectric light curtain in a safety circuit. See details below about light curtain models, wiring, etc.

-  **When deciding on the safety category to be adopted, carefully consider the risks analysis of the machine.**
-  **The module has been designed in particular for use with the di-soric light curtains of the SLI4 (category 4) and SLI2 (category 2) series. Consult di-soric before using the interface with other light curtain models or safety devices.**

-  **For safe use of the device, it is essential to read and understand the contents of this handbook.**

-  **Failure to comply with the prescriptions indicated in this notice may result in very high risks for the operating personnel of the protected machine!**

INTERFACE RELAY SR-0

INSTALLATION and ELECTRICAL CONNECTIONS

- Install the SR-0 interface relay in an environment with a protection rating of at least IP54.
- The SR-0 interface relay must be supplied with a 24 V DC \pm 20% power supply.
- The external power supply must comply with the standard EN 60204-1.

Electrical connections

The interface relay is equipped with three terminal boards for the connections to the safety light curtain and to the machine.

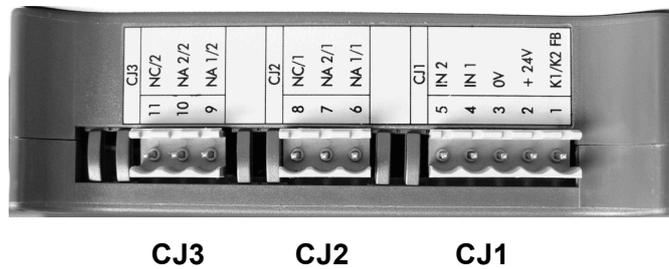


Figure 1

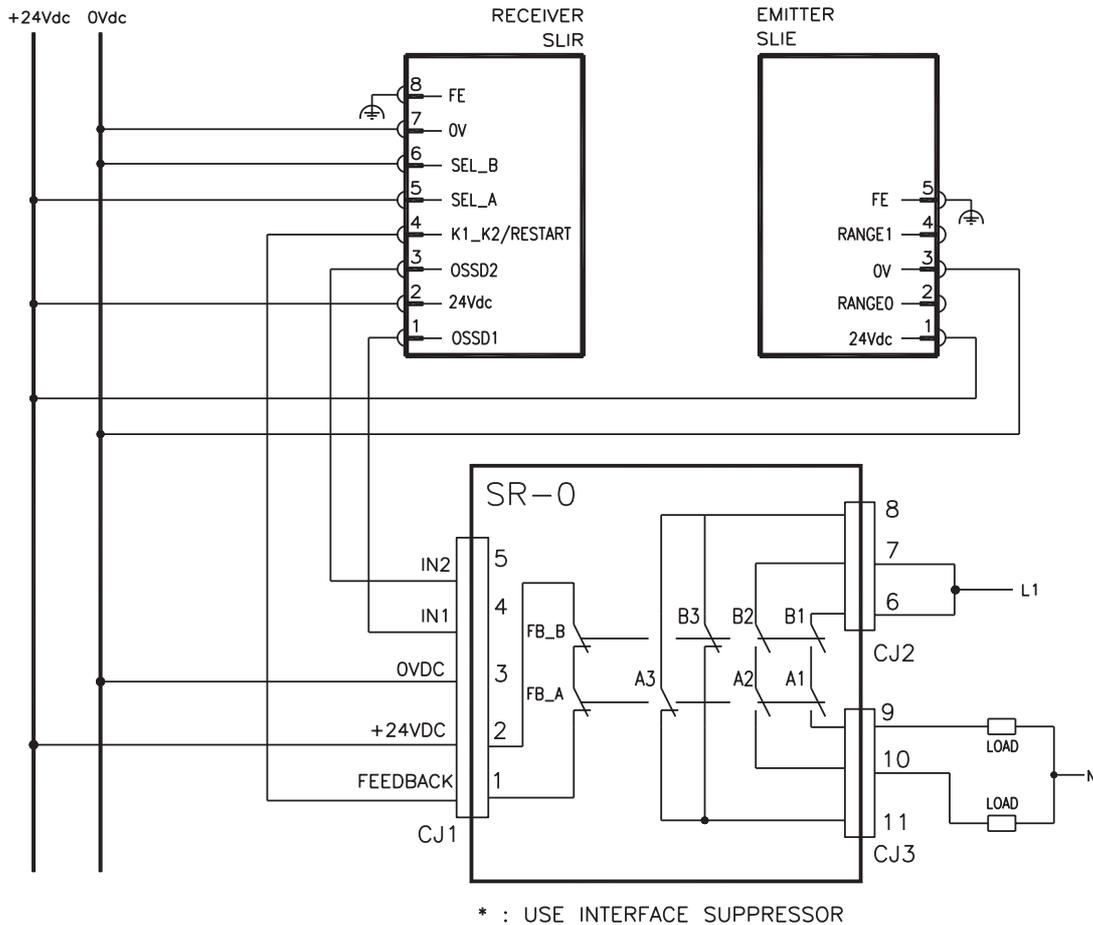
C/J1		
PIN	NAME	DESCRIPTION
1	FB	Internal relays feedback
2	24 V DC	24 V DC Power Supply
3	0 V DC	0 V DC Power Supply
4	IN2	Light curtain static output
5	IN1	Light curtain static output

C/J2	
PIN	NAME
6	N. O. contact
7	N. O. contact
8	N. C. contact

C/J3	
PIN	NAME
9	N. O. contact
10	N. O. contact
11	N. C. contact

English

Example of connection of the SR-0 module with SLI4 safety light curtain in AUTOMATIC operation mode



➔ Further details regarding connections can be found on each safety light curtain technical manual.

Characteristics of the output circuit

For the output circuit, the interface relay uses two guided contact safety relays.

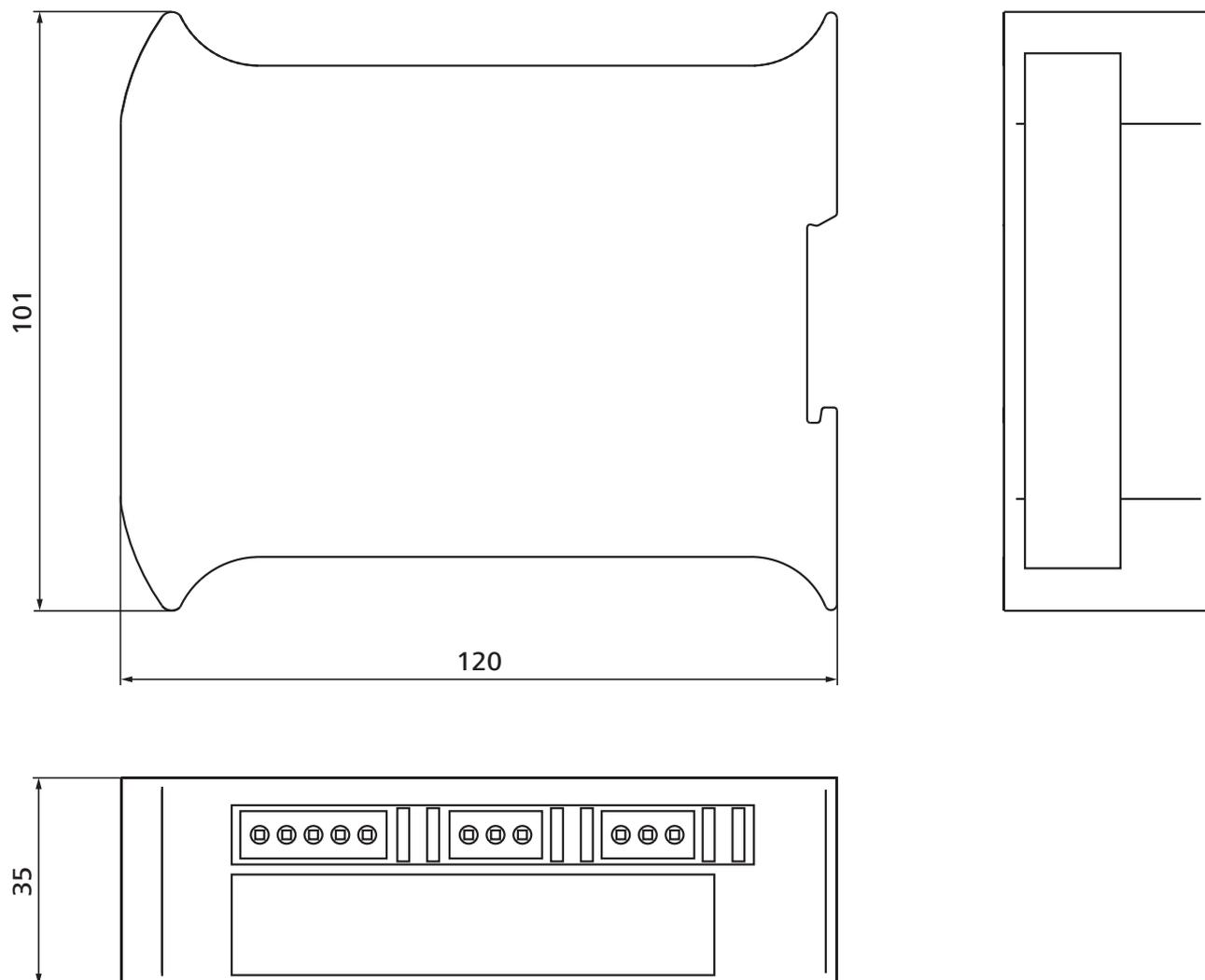
These relays are rated by the manufacturer for voltage and current values above those indicated in the technical data; however, to assure correct insulation and to avoid damage or premature aging, protect each output line with a 3,15 A slow-blow fuse and check that load characteristics comply with the indications given in the technical data.

Warnings regarding the connection cables

English

- For safety light curtain / safety interface connections of more than 50 m, cables with a cross-section of at least 1 mm² must be used.
- It is good practice to separate the power supply of the interface relay from that of other electrical equipment (electrical motors, inverters, frequency variators) or other sources of disturbance.
- The path of the connection cables between the interface relay and the sensors, the connection referring to the feedback contact must be different from that of other power cables.

DIMENSIONS



TECHNICAL DATA SR-0

Power supply	V DC	24 ± 20%
Power requirement	W	1,5 max.
Response time	ms	20 max.
Connections		Terminal block with protection against reversal of polarity
Max. length of connections	m	100
Operating temperature	°C	0 - 55
Enclosure protection rating		IP 20
Terminal block protection rating		IP 2X
Fastening		Fast attachment to rail according to EN 50022-35
Dimensions (h x w x d)	mm	101 x 35 x 120
Weight	g	180
Output circuit		
Number of contacts		2 N. O. – 1 N. C.
Max. switching voltage		250 V AC, 24 V DC
Min. switching voltage		10 V AC, 10 V DC
Max. switching current		2 A
Min. switching current		10 mA at 24 V DC
Switching cycles (life)		≥ 50 x 10 ³ (el) / ≥ 40 x 10 ⁶ (mech)

SAFETY DATA

FEEDBACK CONNECTION ACTIVE					
PFHd	SFF	MTTFd	DCavg		
8,16E-09	99,5%	71,02	99,0%	tcycle 1	AC15 (6 A)
6,78E-10	99,5%	851,50	98,9%	tcycle 2	
4,35E-11	99,2%	13442,07	97,6%	tcycle 3	
1,52E-09	99,5%	378,64	99,0%	tcycle 1	AC15 (2 A)
1,28E-10	99,4%	4523,66	98,5%	tcycle 2	
9,14E-12	99,0%	67522,13	91,9%	tcycle 3	

FEEDBACK CONNECTION MISSING					
PFHd	SFF	MTTFd	DCavg		
4,60E-07	0,50	71,01738	0	tcycle 1	AC15 (6 A)
4,43E-09	0,52	851,5035	0	tcycle 2	
9,73E-11	0,69	13442,07	0	tcycle 3	
1,86E-08	0,51	378,6359	0	tcycle 1	AC15 (2 A)
3,62E-10	0,58	4523,66	0	tcycle 2	
1,74E-11	0,87	67522,13	0	tcycle 3	

- tcycle 1: 300 s (one commutation every 5 minutes)
- tcycle 2: 3600 s (one commutation every hour)
- tcycle 3: one commutation every day

(PFHd according to IEC61508, MTTFd and DCavg according to ISO13849-1)

WARRANTY

di-soric warrants that each SR-0 unit in new ex-factory condition, in conditions of normal use, is free of defects in the materials and of manufacturing defects for a period of 12 (twelve) months.

In this period, di-soric undertakes to eliminate any faults in the product through repair or replacement of the faulty parts, completely free of charge as regards material and labor.

However, di-soric reserves the right to replace the entire faulty appliance with another equivalent appliance or with the same characteristics instead of repairing this.

Validity of this warranty is regulated by the following conditions:

- The user must inform di-soric of the fault within twelve months from the date of delivery of the product.
- The appliance and its components must be in the conditions in which they were delivered by di-soric.
- The serial numbers must be clearly legible.
- The fault or defect has not been caused directly or indirectly by:
 - Improper use;
 - Non-compliance with instructions for use;
 - Carelessness, inexperience, incorrect maintenance;
 - Repairs, modifications, adaptations not carried out by di-soric personnel, tampering, etc.;
 - Accidents or impacts (also due to transportation or causes of force majeure);
 - Other causes not to be ascribed to di-soric.

Repairs will be carried out at the di-soric laboratories to which the material must be delivered or dispatched: transport risks and the risks of any damage or loss of the material during shipment are the responsibility of the user.

All products and components replaced become the property of di-soric.

di-soric does not recognize any other warranties or rights except for those specifically described above; therefore, no claims for damages may be submitted for expenses, interruption of business or other factors or circumstances in any way related to failure of the product or of one of its parts.

Precise, complete compliance with all the rules, instructions and prohibitions indicated in this handbook is an essential requirement for correct functioning of the safety relay. di-soric therefore declines any responsibility for all and anything resulting from failure to comply, even partially, with such indications.

Characteristics subject to change without notice. • Total or partial reproduction is forbidden without the prior authorization of di-soric.

GERMANY

di-soric GmbH & Co. KG

Steinbeisstraße 6

73660 Urbach

Germany

Fon: +49(0)7181/9879-0

Fax: +49(0)7181/9879-179

info@di-soric.com

**Niederlassungen
Subsidiaries****AUSTRIA**

di-soric Austria GmbH & Co. KG

Burg 39

4531 Kematen an der Krems

Austria

Fon: +43(0)7228/72366

Fax: +43(0)7228/72366-4

info.at@di-soric.com

FRANCE

di-soric SAS

19, Chemin du Vieux Chêne

38240 Meylan

France

Fon: +33(0)476/616590

Fax: +33(0)476/616598

info.fr@di-soric.com

SINGAPORE

di-soric Pte. Ltd.

8 Ubi Road 2, #07-13 Zervex

Singapore 408538

Singapore

Fon: +65/66343843

Fax: +65/66343844

info.sg@di-soric.com

