1. Safety

The UK 48-2 OS Safety Relay events safety-related requirements as per EN 61 508 and IEC 61 326-3 and are therefore classified as Group 1 Category 4 devices. The use of the equipment shall be carried out in accordance with its intended use and only by suitably trained personnel. All applicable national and European directives and standards must be observed.

1.1 Safety regulations

- Equipment Evaluation and Testing (EET) regulations
- Machinery Directive 2006/42/EC
- EN 61 326-3-1
- EN 61 439-2
- Low Voltage Directive 73/23/EEC
- Non-Electrical Equipment and Systems (97/23/EC)
- The Accident Prevention Regulations and Safety Rules
- Manufacturers and users of the machine and the equipment to which the supplier is bound by current national and European regulations and rules with their competent authority, and for observing them.

- The operating instructions are to be followed.
- Manufacturers shall ensure that the machine and equipment is not only set up properly and used in a correct manner.
- The operating instructions are to be transferred and logged in the user’s manual.

1.2 Assembly

- Any assembly of the equipment shall be carried out only by personnel specifically trained in the field of the assembly and in accordance with the assembly instructions.

1.3 Instructions

- The correct use of the accessory unit is subject to the conditions laid down in the instructions.
- The accessory unit must be introduced by competent personnel.

1.4 Environmentally correct disposal

- The UE 48-2 OS Safety Relay meets safety-related requirements as per EN 954-1 and those of Stop Category 0 (EN 61 496-1). The system shall be isolated, to prevent any hazard.

- The necessary input and output signals for the input and output signals shall be provided in accordance with the instructions. According to the safety category to be used (EN 61 496-1), for every process-related safety device, and for observing them.

1.5 Safety regulations

- EN 61 508, MSL, LSI
- Equipment Regulation 89/655/EEC
- Electronic System Protection (ESPE)
- Positive safety-related relationship (S 21 - S 22)

- The input and output circuits must be isolated, even as part of assembly and installation, to prevent any hazard.
- All components of the UE 48-2 OS must be installed and commissioned in the manner prescribed by the manufacturer.

1.6 S3000, MSL, LSI

- EN 61 496-1.
- Positive safety-related relationship (S 21 - S 22).

- The wires for the input and output signals (EN 954-1) and those of Stop Category 0 (EN 61 496-1) shall be provided in accordance with the instructions. According to the safety category to be used (EN 61 496-1), for every process-related safety device, and for observing them.

1.7 Model 2.0

- The wire links between the components and the operating instructions are to be heeded.
- The operating instructions are to be heeded.

2. Product Description

- The product is a safety relay, model 2.0.
- The input and output circuits are operated by the system.

2.1 Construction and operation of the unit

- The inputs of the UE 48-2 OS Safety Relay are supplied from different voltage sources.
- The inputs and outputs must be connected in accordance with the instructions.

2.2 Functions of the unit

- The inputs and outputs are connected in accordance with the instructions.

2.3 Safety-related requirements

- The single-channel and dual-channel operation are implemented by means of EDM.

3 Assembly

- The units are installed by snapping onto a mounting rail.

4 Wiring of connections

- The wiring of the connections must be carried out in accordance with the instructions.

4.1 Wiring of connections

- In operation, the UE 48-2 OS Safety Relay is isolated, to prevent any hazard.

4.2 Connection diagram

- The connection diagram shows the wiring of the connections in accordance with the instructions.

4.2.1 Single-channel operation

- The wiring of the connections must be carried out in accordance with the instructions.

4.2.2 Dual-channel operation

- The wiring of the connections must be carried out in accordance with the instructions.

5 Operating modes

- The operating modes of the system are implemented by means of EDM.
- The operating modes of the system are implemented by means of EDM.
- The operating modes of the system are implemented by means of EDM.

- The operating modes of the system are implemented by means of EDM.

6 Electrical installation

- The electrical installation must be carried out in accordance with the instructions.
- The electrical installation must be carried out in accordance with the instructions.
- The electrical installation must be carried out in accordance with the instructions.

7 Technical Data

- The technical data are given in the instructions.

- The technical data are given in the instructions.
- The technical data are given in the instructions.
- The technical data are given in the instructions.
- The technical data are given in the instructions.

8 Ordering Data

- The ordering data are given in the instructions.

9 Appendix

- Fig. 3: Example of a dual-channel safety relay with contactor monitoring and manual reset

10 Glossary

- Glossary

11 References

- References

12 Additional Information

- Additional Information
1. Safety

The UK 42-02 Safety Relay is intended for use on the output circuits of Stop Category 0 according to IEC/EN 954-1 and those of Stop Category 0 according to EN 60204-1. The safety relay is used for monitoring the input circuits, synchronising the output circuits, actuating the sensor, emergency stop and opening the protective field. The safety relay is used in combination with SIEC machines and devices for automated production processes.

2. Product Description

The safety relay is used to meet the requirements of EN 954-1 and those of Stop Category 0 according to EN 60204-1. The safety relay is used for monitoring the input circuits, synchronising the output circuits, actuating the sensor, emergency stop and opening the protective field. The safety relay is used in combination with SIEC machines and devices for automated production processes.

3. Safety regulations

3.1 Internal wiring UE 48-2 OS

The internal wiring is to be carried out by a competent person.

3.2 The national and international legal provisions on safety and electrical installations of appliances are to be observed. The legal provisions of the applicable country are to be applied.

3.3 The wires for the input and output signals (EN 60204-1). The national and international legal provisions on safety and electrical installations of appliances are to be observed. The legal provisions of the applicable country are to be applied.

3.4 The wiring diagram must be stored for a period of 5 years after the machine has been decommissioned. The wiring diagram must be stored for a period of 5 years after the machine has been decommissioned.

3.5 All rights reserved

The safety relay is intended for use in accordance with the applicable national and international standards. The user of the safety relay is responsible for ensuring that the safety relay is used in accordance with the applicable national and international standards. The user of the safety relay is responsible for ensuring that the safety relay is used in accordance with the applicable national and international standards. The user of the safety relay is responsible for ensuring that the safety relay is used in accordance with the applicable national and international standards.

3.6 The user of the safety relay is responsible for ensuring that the safety relay is used in accordance with the applicable national and international standards. The user of the safety relay is responsible for ensuring that the safety relay is used in accordance with the applicable national and international standards. The user of the safety relay is responsible for ensuring that the safety relay is used in accordance with the applicable national and international standards.

3.7 The user of the safety relay is responsible for ensuring that the safety relay is used in accordance with the applicable national and international standards. The user of the safety relay is responsible for ensuring that the safety relay is used in accordance with the applicable national and international standards. The user of the safety relay is responsible for ensuring that the safety relay is used in accordance with the applicable national and international standards.

4. Function of the safety relay

4.1 The safety relay is to be used for monitoring the input circuits, synchronising the output circuits, actuating the sensor, emergency stop and opening the protective field. The safety relay is used in combination with SIEC machines and devices for automated production processes.

4.2 The safety relay is to be used for monitoring the input circuits, synchronising the output circuits, actuating the sensor, emergency stop and opening the protective field. The safety relay is used in combination with SIEC machines and devices for automated production processes.

4.3 Operating modes: Contact sensors and contact elements in series with the Reset button activate the EDM. Connecting the normally closed contacts of the input circuits, the protective field is illuminated. The normally closed output is not a safety-related function. Connecting the normally closed contacts of the input circuits, the protective field is illuminated.

4.4 Reset

Connecting the normally closed contacts of the input circuits, the protective field is illuminated. The normally closed output is not a safety-related function. Connecting the normally closed contacts of the input circuits, the protective field is illuminated.

4.5 EDM

Connecting the normally closed contacts of the input circuits, the protective field is illuminated. The normally closed output is not a safety-related function. Connecting the normally closed contacts of the input circuits, the protective field is illuminated.

4.6 Monitoring of synchronisation:

Monitoring of synchronisation:

4.7 System voltage supply must be made. The system voltage supply must be made. The system voltage supply must be made.

5. Function test

5.1 Function test

The function test is to be carried out during commissioning. The function test is to be carried out during commissioning. The function test is to be carried out during commissioning.

5.2 Commissioning

Commissioning:

5.3 Touching the input circuits, synchronising the output circuits, actuating the sensor, emergency stop and opening the protective field.

5.4 The safety relay is to be used for monitoring the input circuits, synchronising the output circuits, actuating the sensor, emergency stop and opening the protective field. The safety relay is used in combination with SIEC machines and devices for automated production processes.

5.5 The safety relay is to be used for monitoring the input circuits, synchronising the output circuits, actuating the sensor, emergency stop and opening the protective field. The safety relay is used in combination with SIEC machines and devices for automated production processes.

5.6 The safety relay is to be used for monitoring the input circuits, synchronising the output circuits, actuating the sensor, emergency stop and opening the protective field. The safety relay is used in combination with SIEC machines and devices for automated production processes.

6. Technical data

6.1 General System Data

The general system data is to be carried out during commissioning. The general system data is to be carried out during commissioning. The general system data is to be carried out during commissioning.

6.2 Electrical parameters

The electrical parameters are to be observed in accordance with the applicable national and international standards. The electrical parameters are to be observed in accordance with the applicable national and international standards. The electrical parameters are to be observed in accordance with the applicable national and international standards.

6.3 Technical specifications

The technical specifications are to be observed in accordance with the applicable national and international standards. The technical specifications are to be observed in accordance with the applicable national and international standards. The technical specifications are to be observed in accordance with the applicable national and international standards.

6.4 Dimensions

The dimensions are to be observed in accordance with the applicable national and international standards. The dimensions are to be observed in accordance with the applicable national and international standards. The dimensions are to be observed in accordance with the applicable national and international standards.

6.5 Instructions

Instructions:

6.6 Instructions:

Instructions:

6.7 Instructions:

Instructions:

6.8 Instructions:

Instructions:

6.9 Instructions:

Instructions:

6.10 Instructions:

Instructions:
Safety Relay
Series UE 48-2 OS

1. Safety

The UE 48-2 OS Safety Relay is designed for safety-critical medical, research and technical applications according to the following regulations and rules with their competent authorities in the country concerned. SICK will be pleased to assist in evaluating the suitability of the product for the intended application and for confirming the conformance of the device with the requirements specified.

1.1. Safety regulations
- All electrical and mechanical equipment must be checked in accordance with the applicable regulations and rules with their competent authorities in the country concerned.

1.2. Product Description
The purpose of the safety relay is to protect the safety sensor from external influences. The safety relay is intended to be used as a safety control device. It is to be used in safety-critical applications, such as medical equipment, research and technical applications.

1.3. Fault situations
Any fault that may occur on the safety relay shall be indicated by a fault signal. The fault signal shall be distinguishable from the normal output signal.

1.4. Functional safety
The functional safety of the safety relay shall be designed in accordance with the applicable regulations and rules with their competent authorities in the country concerned. The safety relay shall be tested in accordance with the applicable regulations and rules with their competent authorities in the country concerned.

1.5. Maintenance
The safety relay shall be examined in accordance with the applicable regulations and rules with their competent authorities in the country concerned. The safety relay shall be maintained in accordance with the applicable regulations and rules with their competent authorities in the country concerned.

1.6. Regular inspection/testing of the safety relay
The safety relay shall be regularly inspected and tested in accordance with the applicable regulations and rules with their competent authorities in the country concerned. The inspection and testing shall be performed in accordance with the applicable regulations and rules with their competent authorities in the country concerned.

1.7. Technical data
The technical data of the safety relay shall be provided in accordance with the applicable regulations and rules with their competent authorities in the country concerned. The technical data shall be provided in accordance with the applicable regulations and rules with their competent authorities in the country concerned.

1.8. Declaration of conformity
The manufacturer shall issue a declaration of conformity in accordance with the applicable regulations and rules with their competent authorities in the country concerned.

2. Product Identification
The safety relay shall be identified in accordance with the applicable regulations and rules with their competent authorities in the country concerned.

2.1. Marking
The safety relay shall be marked in accordance with the applicable regulations and rules with their competent authorities in the country concerned.

2.2. CE marking
The safety relay shall bear the CE marking in accordance with the applicable regulations and rules with their competent authorities in the country concerned.

2.3. Indicators
The safety relay shall be equipped with indicators in accordance with the applicable regulations and rules with their competent authorities in the country concerned.

3. Operation
The safety relay shall be operated in accordance with the applicable regulations and rules with their competent authorities in the country concerned.

4. Electrical Installation
4.1. General
The safety relay shall be connected to the supply voltage in accordance with the applicable regulations and rules with their competent authorities in the country concerned.

4.2. Operating modes
4.2.1. Single-channel operation
The safety relay shall be connected to the supply voltage in accordance with the applicable regulations and rules with their competent authorities in the country concerned.

4.2.2. Dual-channel operation
The safety relay shall be connected to the supply voltage in accordance with the applicable regulations and rules with their competent authorities in the country concerned.

4.3. Connection to safety sensor
The safety relay shall be connected to the safety sensor in accordance with the applicable regulations and rules with their competent authorities in the country concerned.

4.4. Reset
The safety relay shall be reset in accordance with the applicable regulations and rules with their competent authorities in the country concerned.

5. Technical Data
The technical data of the safety relay shall be provided in accordance with the applicable regulations and rules with their competent authorities in the country concerned.

6. Appendix
Appendix A
Appendix B
Appendix C
Appendix D
Appendix E
Appendix F
Appendix G
Appendix H
Appendix I
Appendix J
Appendix K
Appendix L
Appendix M
Appendix N
Appendix O
Appendix P
Appendix Q
Appendix R
Appendix S
Appendix T
Appendix U
Appendix V
Appendix W
Appendix X
Appendix Y
Appendix Z

Fig. 1: Internal wiring UE 48-2 OS
1. Safety
The UK 48-2 OS Safety Relay is essentially a single channel of output and input signals which can be connected to the safety category and incorporated into the output circuits – see EN 60 947-5-1.

2. Construction and operation of the unit
The inputs of the UE 48-2 OS Safety Relay shall be connected to the output circuits, a protective circuit must be provided and the output circuits shall be electrically insulated. To do so, it shall be observed that the protective circuit cross-sectional area corresponds to the safety category to be used (EN 60 947-5-1, for example, according to the application specification).

3. Function of the unit
In operation, the UE 48-2 OS Safety Relay is supplied from different voltage sources (A 1 – A 2) and from different voltage sources (A 1 – A 2) to different control systems. The system voltage supply must be made.

4. Wiring connections
4.1 Wiring diagram

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S11</td>
<td>PS 33 – 34</td>
</tr>
</tbody>
</table>
| S21   | K 2 Control-Relay K 2 |}

4.2 Operating modes: OSSD (Electro-Sensitive Protective Equipment System)

4.3.2.2 Dual-channel operation

5.1 Function test

5.2 Assembly

6. Electrical insulation

7. Technical Data

---

**Fig. 1**: Internal wiring UE 48-2 OS

**Fig. 2**: Basic wiring UE 48-2 OS: Voltage Techno-Steckblockklemme

**Fig. 6**: A sample of a dual-channel safety relay with manual reset, emergency stop switch with manual reset, and microswitches.