

# **SIDENT/III**

## **Non-Contact Safety Switch**

User's manual for installation and operation GA 13.14-42, -44, -65  
Original manual, Edition 10.20

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### **Table of Contents**

|                                                                                  |           |
|----------------------------------------------------------------------------------|-----------|
| <b>1. Proper Use</b>                                                             | <b>2</b>  |
| <b>2. Disclaimer</b>                                                             | <b>2</b>  |
| <b>3. Mounting</b>                                                               | <b>2</b>  |
| <b>4. Electric Connection</b>                                                    | <b>3</b>  |
| <b>5. Maintenance and Inspection</b>                                             | <b>3</b>  |
| <b>6. Marking</b>                                                                | <b>3</b>  |
| <b>7. System Description</b>                                                     | <b>4</b>  |
| <b>8. Wiring</b>                                                                 | <b>5</b>  |
| <b>9. Instructions for Repositioning the Sensing<br/>Face of the Sensor Head</b> | <b>9</b>  |
| <b>10. Technical Data</b>                                                        | <b>11</b> |
| <b>11. Order Data</b>                                                            | <b>14</b> |
| <b>12. Certificate and Declaration of Conformity</b>                             | <b>16</b> |

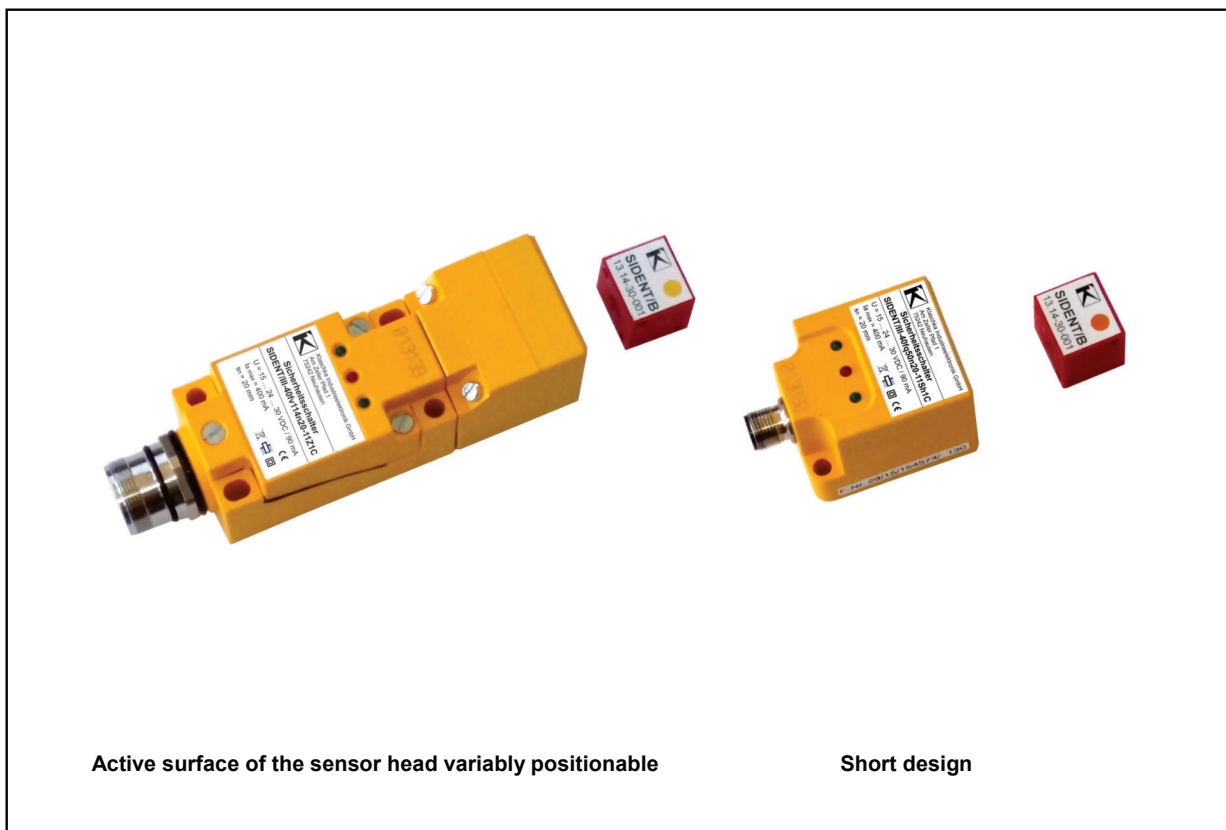
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We are certified according to DIN EN ISO 9001

Subject to technical changes!





## Warning

- The *safe use* of SIDENT/III requires that all relevant and specific directives and regulations are taken into consideration; some of them are indicated in this document. See also the chapters on “*Proper use*”, “*Mounting*” and “*Electric Connection*”.
- The products described in this manual have been developed for safety-related functions as part of a complete plant or machine. A complete safety-related system usually contains switches, evaluation units, signal units and units for safe interruption. It is the responsibility of the manufacturer of a plant or machine to ensure its correct overall function. Klaschka Industrieelektronik GmbH cannot guarantee all characteristics of a complete plant or machine not conceived by Klaschka.
- Furthermore, Klaschka accepts no liability for recommendations given or implied in this description. This description cannot be used to derive new guarantee, warranty or liability claims exceeding our terms of delivery.



## Attention

- Classification and certification in accordance with control category 3 apply only to SIDENT/III itself, but not necessarily to the particular application. It is essential to carry out a full system assessment, which takes the environment and integration of the SIDENT/III into consideration.
- Control category 3 can only be achieved if there is effective cross-circuit monitoring. A frequently used and state-of-the-art procedure is *clocking* the power supply for the output stages. Alternatively, cross-circuits can be prevented by special (separate) installation of the wiring, or using *armoured* connecting leads.

## 1. Proper Use

The purpose of the SIDENT/III safety switch is to monitor *mobile, separating safety devices*. These are intended to ensure that dangerous work carried out on or with a machine or plant can only be executed when the safety device is closed.

The SIDENT/III safety switch can accomplish its task only if it is employed, wired and installed in accordance with the manufacturer's instructions. In addition, the relevant requirements and regulations must be observed.

These are:

- EN 13849-1 - safety-related parts of control devices,
- EN 1088 - locking devices in connection with separating safety devices,
- EN 60204-1 - electrical equipment of machines,
- EN 60947-5-3 - requirements for proximity switches with a defined action under fault conditions.

It is required to carry out a risk evaluation for the machine or plant itself based on the following standards:

- EN 13849-1 - safety-related parts of control devices,
- EN 14121 - safety of machines, risk evaluation.



### Attention

- The overall concept of the control embedding the SIDENT/III safety switch has to be validated in accordance with EN ISO 13849-2 or EN 62061.



### Danger

- When used for the protection of humans, the incorrect installation or manipulation of the SIDENT/III safety switch may result in severe injuries or the death of persons.

The described product was developed, produced, inspected and documented under consideration of the relevant safety standards. If you observe the handling regulations and safety instructions concerning projecting, installation, proper use, and maintenance as described in this manual, the SIDENT will, in the normal case, neither cause personal injury nor damage to property.

## 2. Disclaimer

Exclusion of liability under the following conditions:

- Improper use,
- Non-observing the safety instructions,
- Mounting and connecting by unqualified staff,
- Functioning tests that are not carried out.

## 3. Mounting



### Warning

- Only technical staff is allowed to mount and to connect the SIDENT/III safety switches.



### Attention

- Safety switch and actuating element have to be installed so as to be easily accessible for control and service purposes.
- The front faces of safety switch and actuating element have to be opposite each other when the safety device is closed. A maximum distance of 0.8 x nominal switching distance is permitted.
- If the actuating element approaches the safety switch laterally instead of frontally, a minimum distance of 1 mm to the sensing face of the safety switch has to be kept.
- The safety switches must not be used as mechanical stop.



### Attention

- In order to make SIDENT/III safety switches and SIDENT/B actuating elements manipulation-safe, these should be installed by using so-called *one-way screws* or glue so that an easy remove is not possible.

#### 4. Electric Connection



##### Warning

- Manipulation of the SIDENT/III, e. g. by bridging the contacts, may lead to the loss of the safety function.



##### Attention

- The connection of the SIDENT/III safety switch must take place in an off-circuit condition.
- When connecting inductive loads to the SIDENT/III, suitable protective circuits have to be used.
- When using a common power supply, all connected inductive loads must be equipped with suitable devices to suppress interferences.
- In accordance with the relevant standards and regulations, the load voltage source must be electrically isolated from the mains supply. It can be connected either with one lead at earth potential (protective grounding) or be non-earthed (use an insulation monitor!).
- For the connection of the SIDENT/III safety switch shielded or unshielded leads may be used. For strong interference voltages (inductive or capacitive), however, shielded leads should be used.
- In the case of very long leads the Ohm's resistance of the lead and the resulting voltage loss have to be taken into account.



##### Danger

- A damaged safety switch or actuating element may lead to the loss of the safety function. When damaged, the device has to be replaced.



##### Note

- Electronic devices have to be stored and transported in suitable packaging to be protected from pollution and heavy shocks.



##### Note

- The safety switch SIDENT/III and the actuating element SIDENT/B have to be disposed properly after their service life.

#### 6. Marking

In order to guarantee a complete traceability of all delivered devices, the safety switches are provided with a 12-digit serial number.

The numerical code consists of the manufacturing date composed of the manufacturing week and year, of the factory order number and a running number within the factory order.

F-no. AA/BB/CCCCC/DDD

- A = manufacturing week
- B = manufacturing year
- C = 6-digit factory order (WA) number
- D = running number within the factory order from 001 to 999

In order to guarantee a precise assignment of the safety switch and the actuator, both components are labelled with a 6-digit safety code.



#### 5. Maintenance and Inspection

Maintenance is not required. In order to guarantee a long-lasting functioning, however, it is recommended to check the safety switch regularly for:

- correct functioning,
- pollution and abrasion,
- leak tightness of the lead entrance,
- the proper installation of the lead connections or connectors.

## 7. System Description

### 7.1. Principle of the SIDENT/III Safety Switch

The SIDENT/III safety switch works together with its actuating element SIDENT/B using the identification principle with a 6-digit safety code which is issued only once. Only one "key", namely the matching SIDENT/B actuating element with its imprinted code, actually fits each "lock" of the SIDENT/III safety switch.

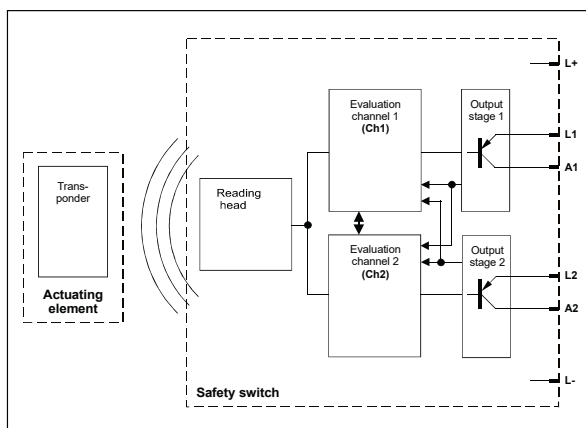
The safety switch and actuating element work on a non-contact basis. Release is given only when the actuating element is within the response range of the switch and the code number of the actuating element matches that of the switch. In this case, the two green safety-switch indicators (**CH1** + **CH2**) light up. The hysteresis zone is identified by the blinking of the red display (**ERR**), while the green indicators continue to flash (both outputs remain either connected or disconnected, depending on the direction of the movement, and show the typical hysteresis behaviour). After exit from the hysteresis zone, both green indicators extinguish and a red indicator lights up.

The code numbers in the safety switch undergo a two-channel analysis procedure.

The two channels monitor each other on a reciprocal basis. Each channel is provided with one output which features two output transistors. The output is continuously monitored also in a switched condition.

By the monitoring of the outputs a short circuit between output and supply is recognised and a switching-on is prevented. In the event of a ground fault or low voltage at one output, both outputs are switched-off. The presence of such disturbance is verified cyclically. This results in short pulses on the non-faulty channel and, at the same time, constitutes a short-circuit protection during normal operation. A resetting of short-circuit monitoring is not necessary due to the intermittent operation mode.

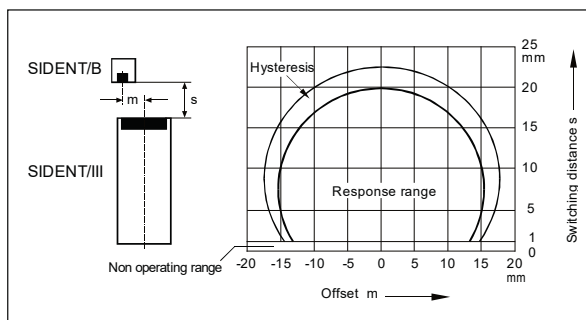
The evaluation device is typically a safety PLC (programmable logic controller) or an emergency stop relay (e.g. Klaschka type ZSY). It supplies the operating voltage for the safety switch and its two outputs. The supply of the outputs can give short timing signals which allow the PLC to check the connecting leads for circuit breaks and cross circuits (for further details, refer to the technical data of the relevant safety PLC). These are tolerated by SIDENT/III to a large extent and do not impair its safety function. However, we recommend comparing with our compatibility list, which is continuously updated and can be requested on demand.



This functional bloc diagram shows the configuration principle of SIDENT/III with its two-channel structure.

### 7.2. Response range

For parallel and centric alignment of the sensing faces of safety switch and actuating element, the following values apply. If the sensing faces are inclined at an angle of up to 30° towards each other, deviations by  $\pm 10\%$  from the standard values occur.



### Attention

- The values indicated for the response range apply only if the mounting instructions are observed. If the SIDENT/III safety switch and/or the actuating element SIDENT/B are mounted flush, which means close to metal surfaces, this may lead to a reduction of the operating values.
- For mounting two SIDENT/III it is required to keep a minimum distance of 120 mm, because otherwise mutual influence can disturb the safety function. The same applies for mounting the actuating elements SIDENT/B.
- Temperatures below -25 °C may lead to a reduction of the nominal switching distance of up to 25 %. Other parameters may also be influenced.



### Attention

- Always connect both clamps (L1 and L2) to power supply, even if only one channel is actually evaluated. Otherwise error messages occur and the outputs are switched-off.
- The power supplies of the signal outputs and of the sensor must refer to a common 0-potential.



### Attention

- In case of a direct connection of inductive loads, e.g. contactors, these must be wired with a suitable fly-wheeling diode in order to suppress the cut-off voltages of the coil.
- RC elements or varistors are not suitable for this.
- If no suitable preventive measures are taken, this may lead to irreversible damages of the output stages.



### Note

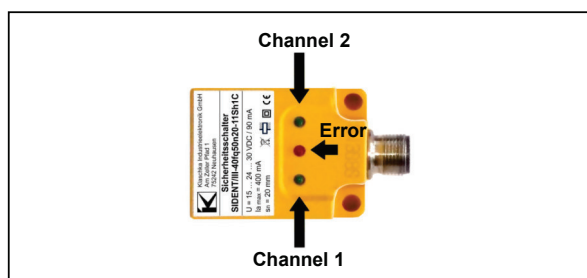
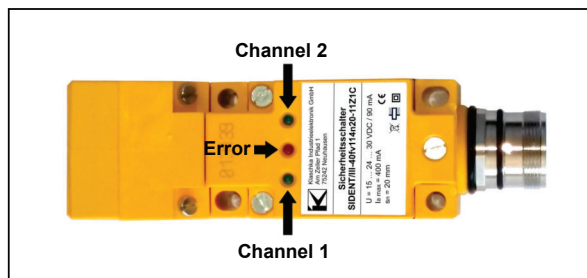
- When there is an error, both safety outputs (channel 1 and 2) will always be switched off.
- It is not necessary, e.g. after a short-circuit, to reset by cutting off the power supply.

### 7.3. LEDs

The status of the SIDENT/III (actuated/non-actuated) and possible error situations can be derived from the LED indication. Some possibilities are represented below:

| Situation               | LED Channel 1 | LED Channel 2 | LED Error   |
|-------------------------|---------------|---------------|-------------|
| <i>Normal operation</i> |               |               |             |
| Sensor actuated         | on            | on            | off         |
| Sensor non-actuated     | off           | off           | on          |
| Hysteresis zone         | on            | on            | is blinking |
| <i>Error situations</i> |               |               |             |
| Channel 1 defective     | off           | on            | on          |
| Channel 2 defective     | on            | off           | on          |
| Short circuit CH 1*     | is blinking   | is blinking   | on          |
| Short circuit CH 2*     | is blinking   | is blinking   | on          |

\* between the channel and the power supply (L-)



### 8. Wiring

At the moment there are two different kinds of SIDENT/III which differ only from the kind of connector:



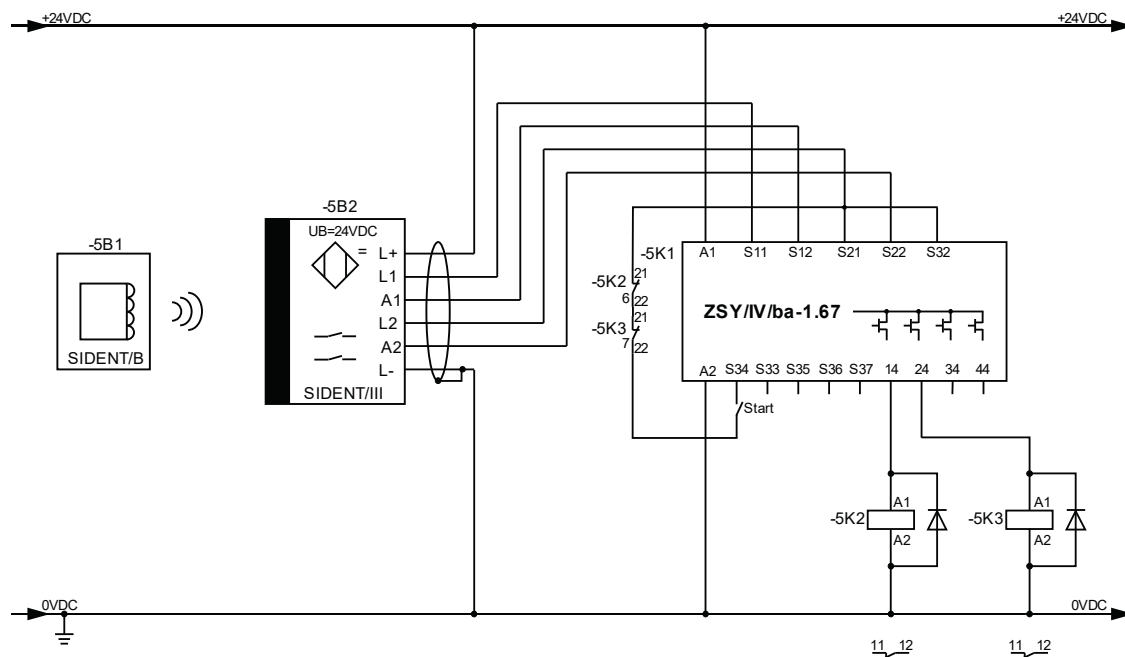
Coninvers  
connector  
series RC



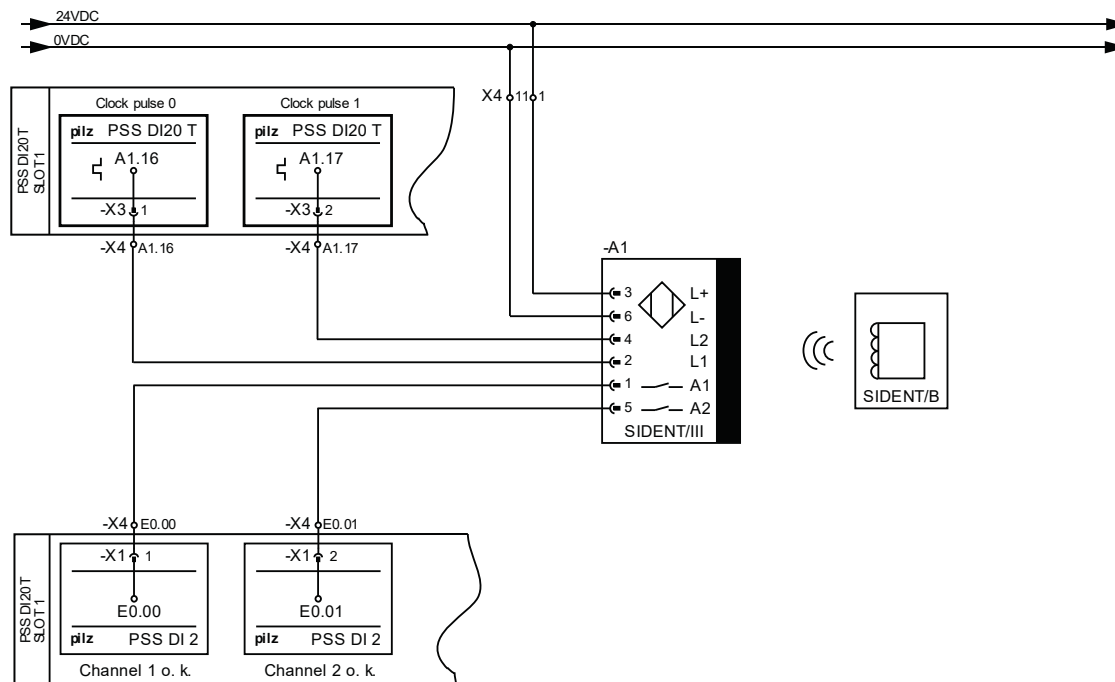
connector  
8 - poles  
M12 x 1

View of unplugged connectors (pin side)

| Pin-no.  | Core colour (VLG) | Pinning | Function                           |
|----------|-------------------|---------|------------------------------------|
| 1        | green             | A1      | Signal output 1                    |
| 2        | yellow            | L1      | Supply for signal output A1        |
| 3        | brown             | L+      | Power supply (+24 VDC)             |
| 4        | pink              | L2      | Supply for signal output A2        |
| 5        | grey              | A2      | Signal output 2                    |
| 6        | white             | L-      | Power supply (0 V)                 |
| With-out | black             | shield  | Only with shielded connecting lead |

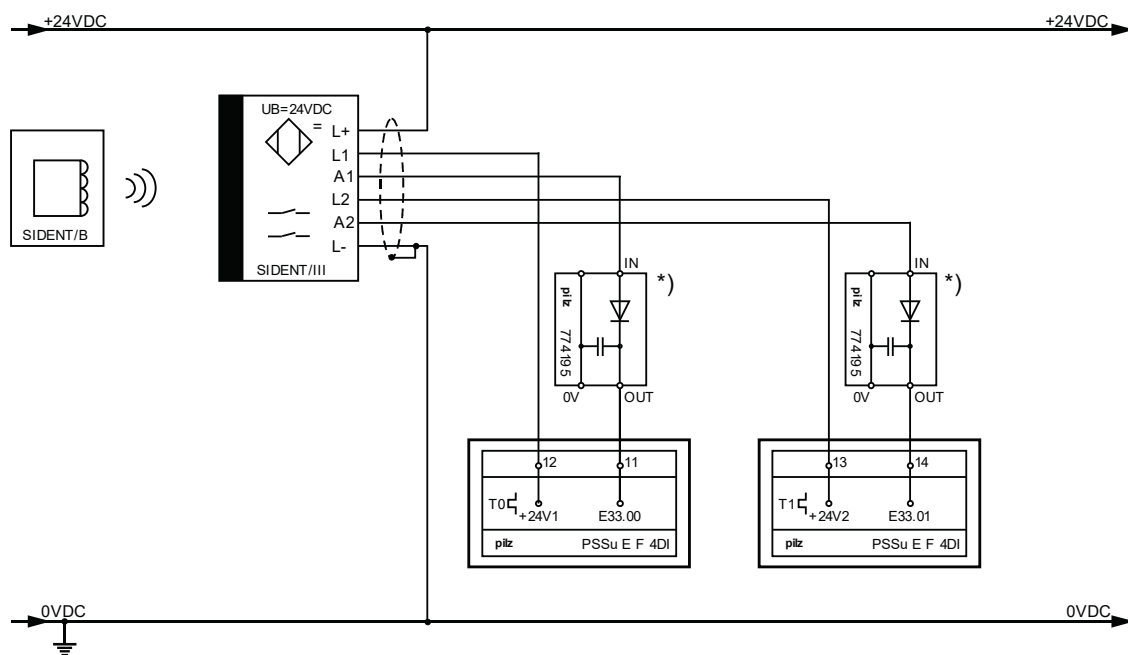


Example for connection: SIDENT/III with safety relay for Safety Switch (here: KLASCHKA ZSY/IV/ba-1.67)



Example for connection: SIDENT/III with safety control (here: PILZ PSS 3000)



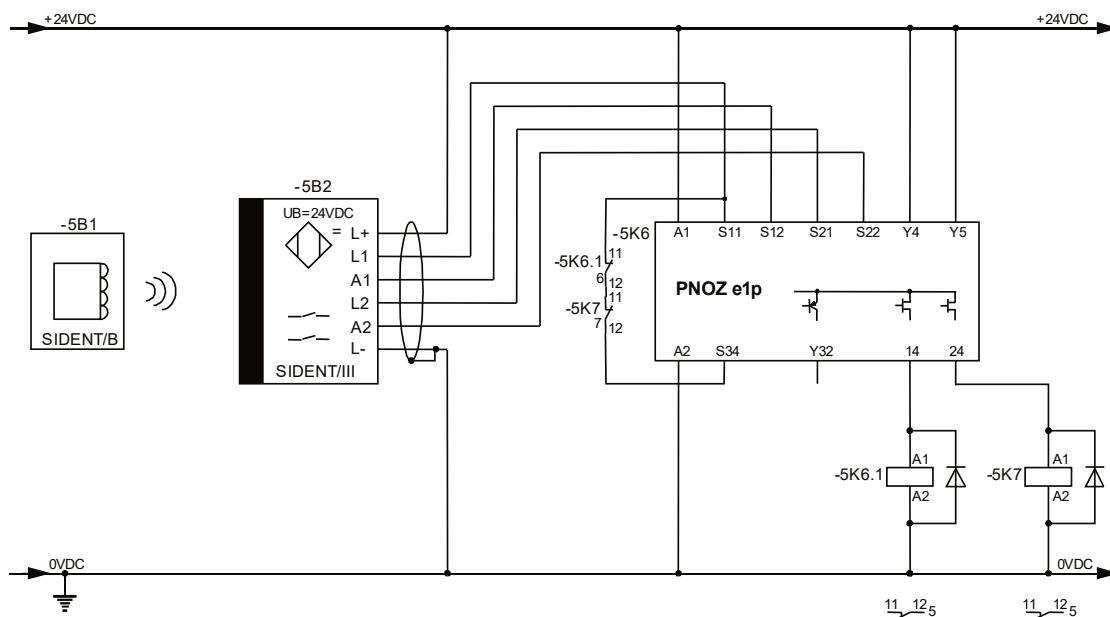


Example for connection: SIDENT/III with safety control (here: PILZ PSSu E F 4DI)

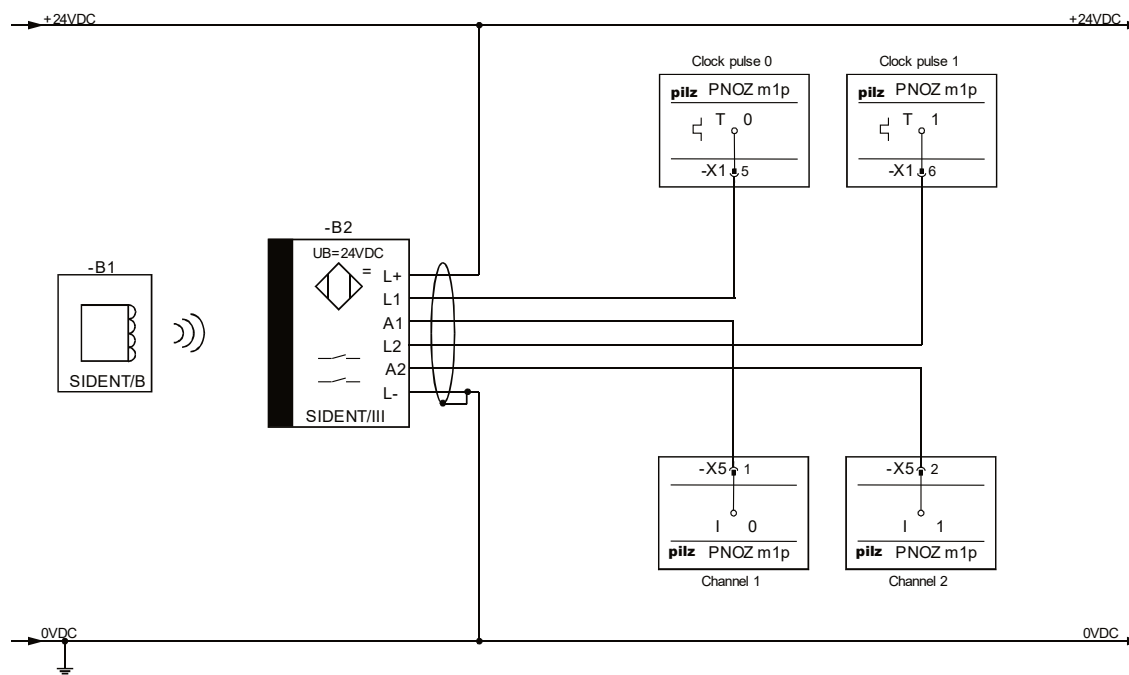
For a proper functioning, please do the following:

- 1) Wire a decoupling diode between SIDENT and PSSu! \*)
- 2) Set on the PSSu E F 4DI module the discrepancy time to 150 ms!
- 3) Do not wire the 0 V clamp on the PSSu E F 4DI module!

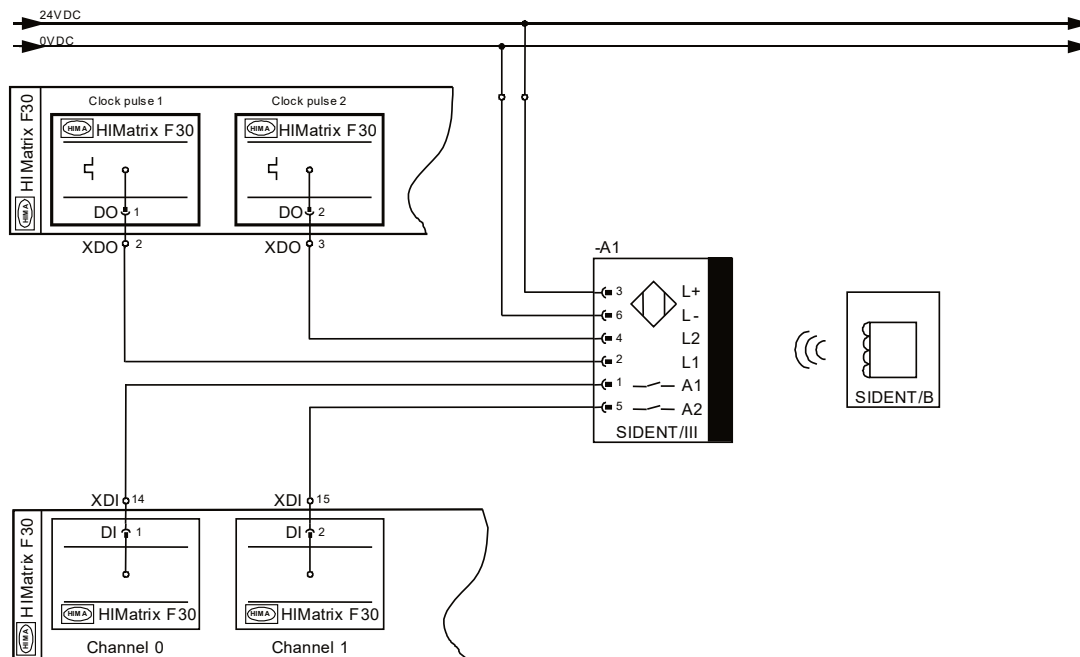
\*) for example a terminal block with filter, order no. 774 195 (made by Pilz GmbH & Co. KG)



Example for connection: SIDENT/III with emergency stop relay (here: PILZ PNOZ e1p)



Example for connection: SIDENT/III with safety control (here: PILZ PNOZ multi)



Example for connection: SIDENT/III with safety control (here: HIMA HIMatrix F30)

## 9. Instructions for Repositioning the Sensing Face of the Sensor Head

In the standard version the head of the safety switch is mounted with its sensing face showing forwards. The sensing face has concentric rings for identification. As a different orientation is necessary for some applications (e.g. for "Staufermatic latch"), the alignment of the sensing face can be adjusted on two axes.

For the Staufermatic latch this must be carried out in two steps:

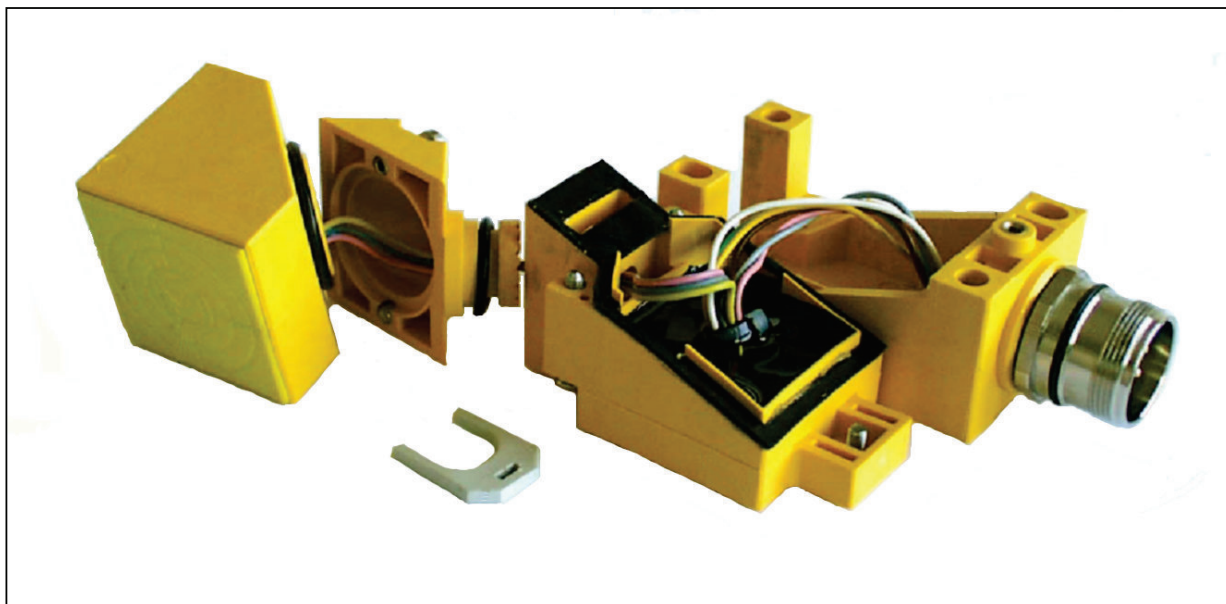
- Rotating the sensor head through 90° *downwards*
- Rotating the sensor head about the longitudinal axis of the SIDENT/III

For a better understanding here is some more information on the configuration of the SIDENT/III.

It consists of 6 major parts:

- Sensor head (mobile part, contains the reading electronics)
- Turning angle (stationary part of the sensor head)
- Wedge (for clamping the sensor head to the cover)
- Basic body (with mounting holes for the SIDENT/III)
- Cover (contains the evaluation electronics)
- Connector (for the connecting lead)

The illustration shows a SIDENT/III dismantled to its major parts.



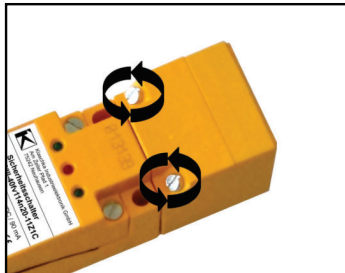
### Achtung

- Take the greatest possible care when disassembling and reassembling a SIDENT/III.
- Make sure that the O-rings and flat gaskets are not damaged, and that they are replaced correctly – this is essential in order to achieve the indicated protection rating. All screws must be refitted and securely tightened (tightening torque  $0.5 \pm 0.1\text{Nm}$ ).
- For reassembling the SIDENT take care that internal wiring which is exposed is not damaged or torn off. It is important to avoid trapping wires when replacing the sensor head.

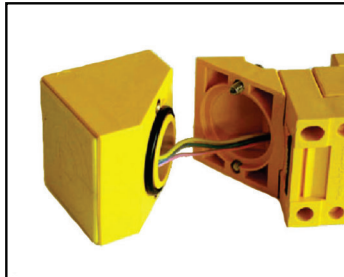
## 9.1. Rotating the sensor head through 90° downwards

Undo the two screws holding the halves of the sensor head together. Pull the front part of the sensor head off the head mounting, turn it through 90° and refit it. Finally, replace the screws that hold the mobile part of the head (see figures).

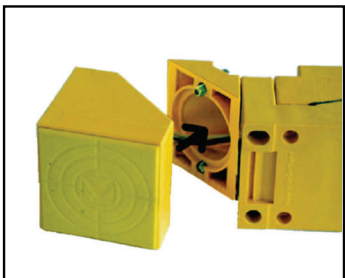
1. Undo fixing screws of the sensor head



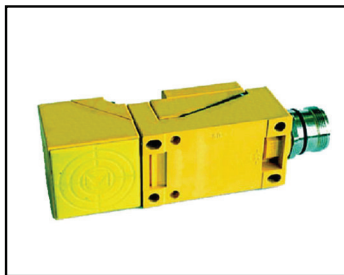
2. Pull off and rotate the head



3. Remount the rotated head



4. SIDENT after the repositioning, the sensing face shows downwards



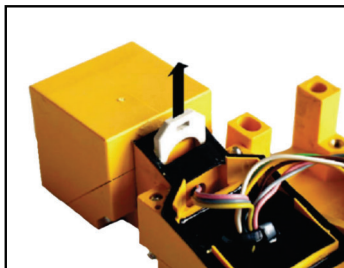
## 9.2. Rotating the Sensor Head about its longitudinal axis

For this purpose, remove the housing bottom of the SIDENT/III body by undoing the three screws which hold the body to the cover. The body can now be pulled-off downwards. You now have access to the wedge that holds the sensor head. Use a suitable tool (e.g. a screwdriver) to pull it out completely. Now, the sensor head can be pulled off and replaced in any position that the teeth permit. Finally, remount the wedge and replace the cover to finish reassembly (see figures).

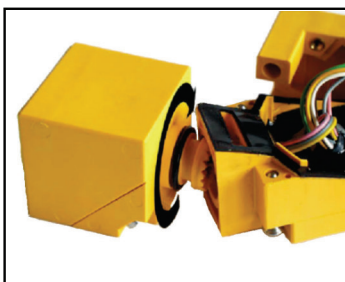
1. Undo fixing screws of the cover



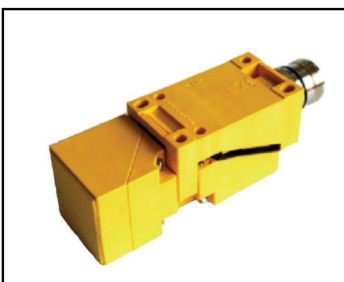
2. Pull off wedge upwards



3. Rotate now the sensor head

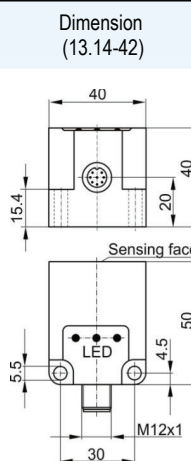
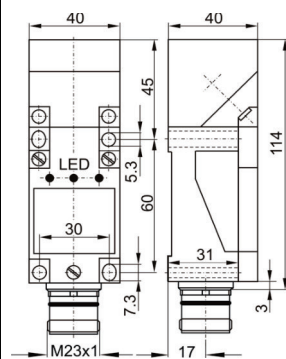
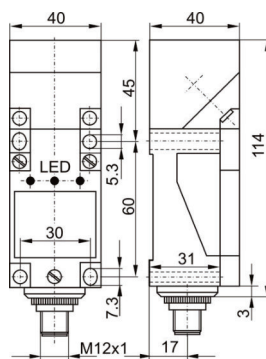


4. SIDENT after the repositioning

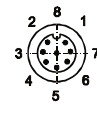


## 10. Technical Data

| Active surface of the sensor head<br>variably positionable                                              |  | Safety Switch category 3                 |                                         |
|---------------------------------------------------------------------------------------------------------|--|------------------------------------------|-----------------------------------------|
| Type<br>Ref. no.                                                                                        |  | SIDENT/III-40fv114n20-11Sh1C<br>13.14-44 | SIDENT/III-40fv114n20-11Z1C<br>13.14-65 |
| Short design                                                                                            |  | SIDENT/III-40fq50n20-11Sh1C<br>13.14-42  |                                         |
| Type<br>Ref. no.                                                                                        |  |                                          |                                         |
| Switching distance, hysteresis                                                                          |  | Dimension<br>(13.14-44)                  |                                         |
| 20 mm, < 15 %                                                                                           |  | Dimension<br>(13.14-65)                  |                                         |
| Assured switch-off distance                                                                             |  |                                          |                                         |
| 35 mm                                                                                                   |  |                                          |                                         |
| Repeat accuracy                                                                                         |  |                                          |                                         |
| ≤ 2 mm                                                                                                  |  |                                          |                                         |
| Design, housing material                                                                                |  |                                          |                                         |
| rectangle 40 x 40 x 114 mm, plastic<br>rectangle 40 x 40 x 50 mm, plastic                               |  |                                          |                                         |
| Mounting                                                                                                |  |                                          |                                         |
| non-flush                                                                                               |  |                                          |                                         |
| Protection rating, weight                                                                               |  |                                          |                                         |
| IP 67, 250 g/160 g                                                                                      |  |                                          |                                         |
| Protection insulation  |  |                                          |                                         |
| protection class II acc. to IEC 947                                                                     |  |                                          |                                         |
| Identification                                                                                          |  |                                          |                                         |
| by 6-digit numeric code                                                                                 |  |                                          |                                         |
| Control category                                                                                        |  |                                          |                                         |
| 3 according to EN 13849-1                                                                               |  |                                          |                                         |
| Performance Level                                                                                       |  |                                          |                                         |
| PL d                                                                                                    |  |                                          |                                         |
| MTTFd                                                                                                   |  |                                          |                                         |
| high                                                                                                    |  |                                          |                                         |
| PFHd                                                                                                    |  |                                          |                                         |
| ≥ 3 * 10 <sup>-8</sup>                                                                                  |  |                                          |                                         |
| Safety Integrity Level                                                                                  |  |                                          |                                         |
| SILCL 2                                                                                                 |  |                                          |                                         |
| Configuration                                                                                           |  |                                          |                                         |
| 2-channel, mutual monitoring                                                                            |  |                                          |                                         |
| Operating voltage range L+                                                                              |  |                                          |                                         |
| 15 ... 24 ... 30 VDC                                                                                    |  |                                          |                                         |
| Current consumption                                                                                     |  |                                          |                                         |
| < 90 mA                                                                                                 |  |                                          |                                         |
| Operation mode                                                                                          |  |                                          |                                         |
| 2 NO                                                                                                    |  |                                          |                                         |
| Input voltage L1, L2                                                                                    |  |                                          |                                         |
| 12 ... 24 ... 30 VDC, can be clocked                                                                    |  |                                          |                                         |
| Output voltage A1, A2                                                                                   |  |                                          |                                         |
| min. ULX -3 V (400 mA);<br>typ. ULX -1.75 V (100 mA)                                                    |  |                                          |                                         |
| Voltage drop U <sub>d</sub>                                                                             |  |                                          |                                         |
| ≤ 3 V                                                                                                   |  |                                          |                                         |
| Output current                                                                                          |  |                                          |                                         |
| < 400 mA per output (40 °C)<br>< 200 mA per output (70 °C)                                              |  |                                          |                                         |
| Minimal operating current I <sub>m</sub>                                                                |  |                                          |                                         |
| ≤ 1 mA                                                                                                  |  |                                          |                                         |
| Residual current I <sub>r</sub>                                                                         |  |                                          |                                         |
| ≤ 0.1 mA                                                                                                |  |                                          |                                         |
| Response time                                                                                           |  |                                          |                                         |
| > 150 ms, typ. 185 ms                                                                                   |  |                                          |                                         |
| Voltage drop                                                                                            |  |                                          |                                         |
| > 75 ms, typ. 100 ms                                                                                    |  |                                          |                                         |
| Switch-on delay                                                                                         |  |                                          |                                         |
| approx. 2 s                                                                                             |  |                                          |                                         |
| Max. actuating frequency                                                                                |  |                                          |                                         |
| 1 Hz                                                                                                    |  |                                          |                                         |
| Indicators                                                                                              |  |                                          |                                         |
| 2 x identification (green),<br>interference (red)                                                       |  |                                          |                                         |
| Reverse polarity/short circuit protect.                                                                 |  |                                          |                                         |
| built-in                                                                                                |  |                                          |                                         |
| Ambiant temperature range                                                                               |  |                                          |                                         |
| - 30 ... + 70 °C *)                                                                                     |  |                                          |                                         |
| Connection                                                                                              |  |                                          |                                         |
|                                                                                                         |  |                                          |                                         |
| Degree of contamination                                                                                 |  |                                          |                                         |
| 3 (according to EN 60947-1)                                                                             |  |                                          |                                         |
| Rated insulation voltage U <sub>i</sub>                                                                 |  |                                          |                                         |
| 35 V                                                                                                    |  |                                          |                                         |
| Rated impulse voltage resistance U <sub>imp</sub>                                                       |  |                                          |                                         |
| 1.5 kV                                                                                                  |  |                                          |                                         |
| Electromagnetic compatability                                                                           |  |                                          |                                         |
| 2004/108/EG                                                                                             |  |                                          |                                         |
| Lead length/cross section                                                                               |  |                                          |                                         |
| max. 300 m, with/without shield                                                                         |  |                                          |                                         |

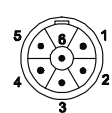


Plug

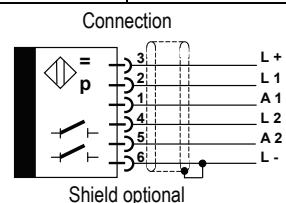


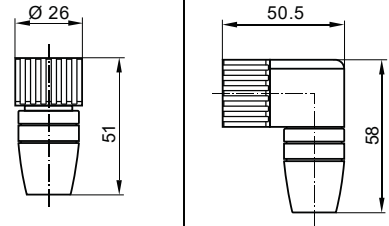
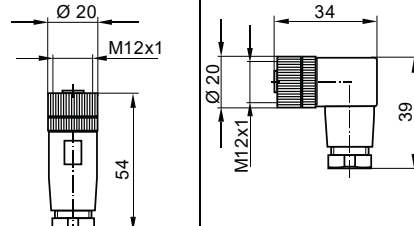
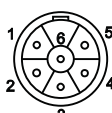
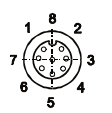
Plug M12 x 1  
8-pole

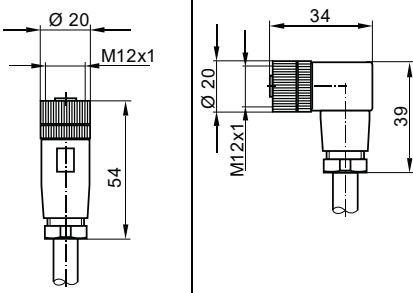
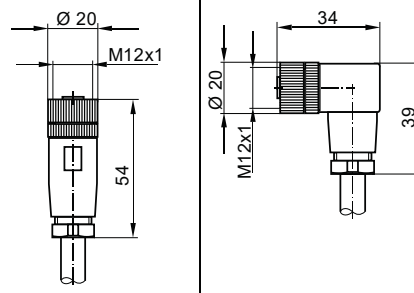
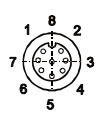
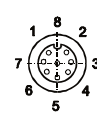
Plug

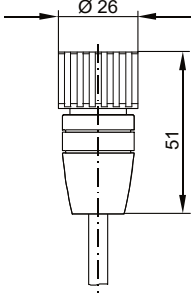
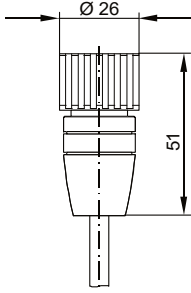


Plug M23 x 1  
6-pole, Coninvers RC

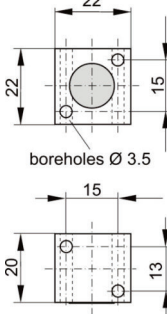
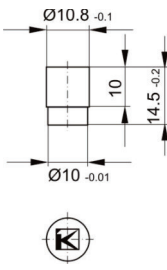


| Safety device                                                                                           | Connector                                                                          |               | Connector                                                                            |                 |
|---------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------|--------------------------------------------------------------------------------------|-----------------|
| Type                                                                                                    | JKYfaZ-O-1                                                                         | JKTfrZ-O-1    | JKShaZ-O-1                                                                           | JKShrZ-O-1      |
| Ref. no.                                                                                                | 13.99-49                                                                           | 13.99-58      | 13.99-47                                                                             | 13.99-50        |
| Design, housing material                                                                                | straight, metal                                                                    | angled, metal | straight, plastic                                                                    | angled, plastic |
| Protection rating, weight                                                                               | IP 67                                                                              |               | IP 67                                                                                |                 |
| Protection insulation  | protection class II according to IEC 947                                           |               | protection class II according to IEC 947                                             |                 |
| Dimensions                                                                                              |   |               |    |                 |
| Ambient temperature range                                                                               | - 30 ... + 70 °C                                                                   |               | - 30 ... + 70 °C                                                                     |                 |
| Connection                                                                                              | socket, 6-pole                                                                     |               | socket, 8-pole, M12 x 1                                                              |                 |
| Contact connection                                                                                      | crimp terminals                                                                    |               | screw clamps                                                                         |                 |
| Connection cross section                                                                                | 0.5 ... 0.75 qmm                                                                   |               | 0.5 qmm                                                                              |                 |
| Lead throughput                                                                                         | 6.5 ... 8 mm                                                                       |               | 6 ... 8 mm                                                                           |                 |
| Socket                                                                                                  |  |               |  |                 |

| Safety device                                                                                             | Connection lead                                                                                                                                                           |                 | Connection lead                                                                                                                                              |                 |
|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Type                                                                                                      | VLG 8E/6S/X-1                                                                                                                                                             | VLG 8E/6S/X-2   | VLG 8E/6/X-1                                                                                                                                                 | VLG 8E/6/X-2    |
| Ref. no.                                                                                                  | 20.18-53                                                                                                                                                                  | 20.18-56        | 20.18-54                                                                                                                                                     | 20.18-57        |
| Design, housing material                                                                                  | straight, plastic                                                                                                                                                         | angled, plastic | straight, plastic                                                                                                                                            | angled, plastic |
| Protection rating, weight                                                                                 | IP 67                                                                                                                                                                     |                 | IP 67                                                                                                                                                        |                 |
| Protection insulation  | Protection class II according to IEC 947                                                                                                                                  |                 | Protection class II according to IEC 947                                                                                                                     |                 |
| Dimensions                                                                                                |  <p>shielded version with<br/>especially high resistance to interference</p>           |                 |                                                                          |                 |
| Ambient temperature range                                                                                 | - 30 ... + 70 °C                                                                                                                                                          |                 | - 30 ... + 70 °C                                                                                                                                             |                 |
| Connection                                                                                                | socket, 8-pole, M12 x 1                                                                                                                                                   |                 | socket, 8-pole, M12 x 1                                                                                                                                      |                 |
| Contact connection                                                                                        | screw clamps                                                                                                                                                              |                 | screw clamps                                                                                                                                                 |                 |
| Lead length/ cross section                                                                                | 6 x 0.5 qmm                                                                                                                                                               |                 | 6 x 0.5 qmm                                                                                                                                                  |                 |
| Socket / connection                                                                                       |  <p>1: green 5: grey<br/>2: yellow 6: white<br/>3: brown Shield: black<br/>4: pink</p> |                 |  <p>1: green 5: grey<br/>2: yellow 6: white<br/>3: brown<br/>4: pink</p> |                 |

| Safety device                                                                                           | Connecting lead                                                                   |                                                                                     |
|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Type                                                                                                    | VLG6E/6S/X-1                                                                      |                                                                                     |
| Ref. no.                                                                                                | 20.18-60                                                                          | 20.18-61                                                                            |
| Design, housing material                                                                                | metal                                                                             | metal                                                                               |
| Protection rating, weight                                                                               | IP 65                                                                             | IP 65                                                                               |
| Protecting insulation  | protection class II according to IEC 947                                          | protection class II according to IEC 947                                            |
| Dimensions                                                                                              |  |  |
|                                                                                                         | shielded version with very high resistance to interference                        |                                                                                     |
| Ambiant temperature range                                                                               | - 30 ... + 70 °C                                                                  | - 30 ... + 70 °C                                                                    |
| Connection                                                                                              | socket, 6-pole, Coninvers RC                                                      | socket, 6-pole, Coninvers RC                                                        |
| Contact connection                                                                                      | crimp terminals                                                                   | crimp terminals                                                                     |
| Lead length/cross section                                                                               | 6 x 0.5 mm <sup>2</sup>                                                           | 6 x 0.5 mm <sup>2</sup>                                                             |

| Connector / connection |  <p>1: green 5: grey<br/>2: yellow 6: white<br/>3: brown shield: black<br/>4: rose</p> |  <p>1: green 5: grey<br/>2: yellow 6: white<br/>3: brown<br/>4: rose</p> |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|

| Safety device                                                                                             | Actuating element                                                                   |                                                                                       |
|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Type                                                                                                      | SIDENT/B-22fv20-401                                                                 | SIDENT/B-11fs14-401                                                                   |
| Ref. No.                                                                                                  | 13.14-30                                                                            | 13.14-40                                                                              |
| Design, housing material                                                                                  | rectangle 22 x 22 x 20 mm, plastic                                                  | cylinder Ø 10.8 mm, plastic                                                           |
| Mounting or installation                                                                                  | fixing preferably with one-way screws (see order data)                              | fixing by using glue type: on request                                                 |
| Protection rating, weight                                                                                 | IP 67, 13 g                                                                         | IP 67, 2 g                                                                            |
| Protecting insulation  | protection class II according to IEC 947                                            | protection class II according to IEC 947                                              |
| Dimensions                                                                                                |  |  |
|                                                                                                           |                                                                                     |  |
| Identification                                                                                            | by 6-digit numeric code                                                             |                                                                                       |
| Control category                                                                                          | 4 according to EN 13849-1                                                           |                                                                                       |
| Configuration                                                                                             | transponder                                                                         |                                                                                       |
| Ambiant temperature range                                                                                 | - 30 ... + 70 °C                                                                    |                                                                                       |



## Important notes for area of application from 2021-01-01

From mid-2021 a proposal by the EU Commission for a revised Machinery Directive (2006/42/EG) is planned. Standards to be revised are also affected (including Norms like DIN EN ISO 13849-1).

The European harmonized law replaces national provisions – applies within European Economic Area (EEA), Switzerland, Turkey.

### The validity of the certificates ends on 2020-12-31.

(Installations outside the scope of the Machinery Directive are not affected).

From 2021-01-01, these products may not be used in new safety-relevant applications within the applicable guidelines.

### Last-order-date: 2020-11-30

For applications within existing and already safety-compliant approved applications, as replacement and, if necessary, retrofitting, (also for applications outside the scope of the Machinery Directive) - SIDENT Safety switches are available furthermore.

For supporting information please contact us or your vendor / distributor

## 11. Order Data

### 11.1. Safety Switch

**SIDENT/III-40fq50n20-11Sh1C** Ref. no. 13.14-42  
Safety Switch category 3,  
with M12 Euro connector,  
**short design**

**SIDENT/III-40fv114n20-11Sh1C** Ref. no. 13.14-44  
Safety Switch category 3,  
with M12 Euro connector  
**active surface variably positionable**

**SIDENT/III-40fv114n20-11Z1C** Ref. no. 13.14-65  
Safety Switch category 3,  
for Coninvers connector  
**active surface variably positionable**

### 11.2. Actuating Elements

**SIDENT/B-22fv20-401** Ref. no. 13.14-30  
Actuating element  
for SIDENT Safety Switch

**SIDENT/B-11fs-14-401** Ref. no. 13.14-40  
Minimal actuating element  
for SIDENT Safety Switch

### 11.3. Connecting Leads

Please indicate lead length X when placing the order  
(Standard value X = 5 m).

**VLG 8E/6S/X-1** Ref. no. 20.18-53  
Connecting lead for SIDENT,  
6-core, shielded (6 x 0.5 mm<sup>2</sup>),  
with M12x1 connector

**VLG 8E/6/X-1** Ref. no. 20.18-54  
Connecting lead for SIDENT,  
6-core, unshielded (6 x 0.5 mm<sup>2</sup>),  
with M12 x 1 connector

**VLG 8E/6S/X-2** Ref. no. 20.18-56  
Connecting lead for SIDENT,  
6-core, shielded (6 x 0.5 mm<sup>2</sup>),  
with M12x1 connector, angled

**VLG 8E/6/X-2** Ref. no. 20.18-57  
Connecting lead for SIDENT,  
6-core, unshielded (6 x 0.5 mm<sup>2</sup>),  
with M12x1-Steckverbinder, angled

**VLG 6E/6S/X-1** Ref. no. 20.18-60  
Connecting lead for SIDENT,  
6-core, shielded (6 x 0.5 mm<sup>2</sup>),  
with Coninvers connector,  
crimp terminals

**VLG 6E/6/X-1** Ref. no. 20.18-61  
Connecting lead for SIDENT,  
6-core, unshielded (6 x 0.5 mm<sup>2</sup>),  
with Coninvers connector,  
crimp terminals



#### 11.4. Connectors

**JKYfaZ-O-1** Ref. no. 13.99-49  
Coninvers connector,  
coupling, series 6-pole, crimp terminals

**JKTfrZ-O-1** Ref. no. 13.99-58  
Coninvers connector,  
coupling, series RC,  
6-pole, angled, crimp terminals

**JKShaZ-O-1** Ref. no. 13.99-47  
M12 connector,  
coupling, series M12  
8-pole, screw clamps

**JKShrZ-O-1** Ref. no. 13.99-50  
M12 connector,  
coupling, series M12  
8-pole, angled, screw clamps

#### 11.5. Accessories for Increasing the Manipulation Safety

**Self-cutting one-way screw** Ref. no. 92.18-20  
Flat head tapping screw, 3.5 x 32 mm,  
one-way slot, stainless steel,  
for fixing the actuating element  
SIDENT/B-22fv20-401

**Self-cutting one-way screw** Ref. no. 92.18-21  
Flat head tapping screw, 4.8 x 50 mm,  
one-way slot, stainless steel,  
for fixing the safety switch  
SIDENT on a sheet metal base

**One-way screw with metrical thread** Ref. no. 92.18-22  
Semi-circular head screw, M5 x 35 mm,  
one-way slot, stainless steel,  
for fixing the safety switch  
SIDENT at Staufermatic latch

## 12. Certificate and Declaration of Conformity (valid until 2020-12-31)

**Bescheinigung**  
Nr. ET 16006  
vom 07.01.2016

**DGUV Test**  
Prüf- und Zertifizierungsstelle  
Elektrotechnik  
Fachbereich Energie Textil  
Elektro Medientechnik  
Europäisch notifizierte Stelle  
Kenn-Nummer 0340

**EG-Baumusterprüfbescheinigung**

Name und Anschrift des  
Bescheinigungsinhabers:  
(Auftraggeber)  
**Klaschka Industrieelektronik GmbH  
Am Zeller Pfad 1  
75242 Neuhausen/Enzkreis**

Name und Anschrift des  
Herstellers:  
**Klaschka Industrieelektronik GmbH  
Am Zeller Pfad 1  
75242 Neuhausen/Enzkreis**

Produktbezeichnung:  
Sicherheitsschalter

Typ:  
Baureihe SIDENT/III (Komponenten siehe Anlage)

Bestimmungsgemäße  
Verwendung:  
Prüfgrundlage: DIN EN 60947-5-3 Niederspannungsschaltgeräte – Teil 5-3:  
Steuergeräte und Schaltelemente –  
Anforderungen für Näherungsschalter mit  
definiertem Verhalten unter  
Fehlerbedingungen 2014-12

DIN EN ISO 13849-2 Sicherheit von Maschinen –  
Sicherheitbezogene Teile von  
Steuerungen – Teil 2: Validierung 2013-02

GS-ET 14 Zusatzanforderungen für die Prüfung und  
Zertifizierung von Näherungsschaltern für  
Sicherheitsfunktionen 2015-05

Bemerkungen:  
Die Sicherheitsbezogene Steuerungsfunktion (SRFC) wird mit Kategorie 3  
und PL d nach DIN EN ISO 13849-1:2008-12 ausgeführt.  
Die mittlere Wahrscheinlichkeit eines Gefähr bringenden Ausfalls pro  
Stunde PFHD liegt zwischen  $\geq 3 \cdot 10^{-7}$  und  $< 2 \cdot 10^{-7}$ .

Das geprüfte Baumuster entspricht den einschlägigen Bestimmungen der Richtlinie  
2006/42/EG (Maschinen).

Diese Bescheinigung ist gültig bis: **31.12.2020**

Weiteres über die Gültigkeit, eine Gültigkeitsverlängerung und andere Bedingungen regelt die  
Prüf- und Zertifizierungsordnung vom August 2012.

Az: NP 520 01 / 15-056-VT01 / Gm/WI

Deutsche Gesellschaft Unfallversicherung (DGUV) e.V.  
Sitzverband der gewerkschaftlichen Berufsgenossenschaften  
und der Unfallversicherungsträger der öffentlichen Hand  
Verenigungsplatz Nr. 10, 50669 Köln - Deutschland  
Telefon +49 (0)21 3778-6301 • Telefax +49 (0)21 3778-6322

DGUV Test Prüf- und Zertifizierungsstelle Elektrotechnik  
Fachbereich Energie Textil Elektro Medientechnik  
Güter-Hafenweg 105 • 50669 Köln - Deutschland  
Telefon +49 (0)21 3778-6301 • Telefax +49 (0)21 3778-6322

Prüfer:  
Dipl.-Ing. Stefan Stommel  
Leiter der Zertifizierungsstelle

**Bescheinigung**  
Nr. ET 16007  
vom 07.01.2016

**DGUV Test**  
Prüf- und Zertifizierungsstelle  
Elektrotechnik  
Fachbereich Energie Textil  
Elektro Medientechnik

**DGUV Test Prüfbescheinigung**

Name und Anschrift des  
Bescheinigungsinhabers:  
(Auftraggeber)  
**Klaschka Industrieelektronik GmbH  
Am Zeller Pfad 1  
75242 Neuhausen/Enzkreis**

Name und Anschrift des  
Herstellers:  
**Klaschka Industrieelektronik GmbH  
Am Zeller Pfad 1  
75242 Neuhausen/Enzkreis**

Produktbezeichnung:  
Sicherheitsschalter

Typ:  
Baureihe SIDENT/III (Komponenten siehe Anlage)

Bestimmungsgemäße  
Verwendung:  
Prüfgrundlage: DIN EN 60947-5-3 Niederspannungsschaltgeräte – Teil 5-3:  
Steuergeräte und Schaltelemente –  
Anforderungen für Näherungsschalter  
mit definiertem Verhalten unter  
Fehlerbedingungen 2014-12

DIN EN ISO 13849-2 Sicherheit von Maschinen –  
Sicherheitbezogene Teile von  
Steuerungen – Teil 2: Validierung 2013-02

GS-ET 14 Zusatzanforderungen für die Prüfung und  
Zertifizierung von Näherungsschaltern für  
Sicherheitsfunktionen 2015-05

Bemerkungen/  
Zeichenzusatz:  
Die Sicherheitsbezogene Steuerungsfunktion (SRFC) wird mit Kategorie 3  
und PL d nach DIN EN ISO 13849-1:2008-12 ausgeführt.  
Die mittlere Wahrscheinlichkeit eines Gefähr bringenden Ausfalls pro  
Stunde PFHD liegt zwischen  $\geq 3 \cdot 10^{-7}$  und  $< 2 \cdot 10^{-7}$ .

Das geprüfte Baumuster stimmt mit den in § 3 des Produktsicherheitsgesetzes genannten  
Anforderungen überein. Das Baumuster entspricht somit auch den einschlägigen  
Bestimmungen der Richtlinie 2006/42/EG (Maschinen).

Der Bescheinigungsinhaber ist berechtigt, das unentgeltlich abgebildete DGUV Test-Zeichen an den  
mit dem geprüften Baumuster übereinstimmenden Produkten anzubringen, sofern zutreffend  
mit dem oben genannten Zeichenzusatz.

Diese Bescheinigung einschließlich der Berechtigung zur Anbringung des DGUV Test-Zeichens  
ist gültig bis: **31.12.2020**

Weiteres über die Gültigkeit, eine Gültigkeitsverlängerung und andere Bedingungen regelt die  
Prüf- und Zertifizierungsordnung vom August 2012.

Az: NP 520 01 / 15-056-VT01 / Gm/WI

Deutsche Gesellschaft Unfallversicherung (DGUV) e.V.  
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Telefon +49 (0)21 3778-6301 • Telefax +49 (0)21 3778-6322

Prüfer:  
Dipl.-Ing. Stefan Stommel  
Leiter der Zertifizierungsstelle



### EU – Declaration of Conformity

We, the manufacturer

**Klaschka  
Industrieelektronik GmbH  
Am Zeller Pfad 1  
D - 75242 Neuhausen / Enzkreis**

declare on basis of the Type Test Certificate No. ET 16006 and GS Test Certificate (for tested safety)  
No. ET 16007, as issued by the competent German Employers' Liability Insurance Association,  
that the safety switches described in the following

| Ref. No.      | Type                                                                 |
|---------------|----------------------------------------------------------------------|
| 13.14-44, -45 | SIDENT / III - 40V114n20-11ShC, -11Z1C                               |
| 13.14-42      | SIDENT / III - 40V62n20-11Sh1C<br>with actuating elements SIDENT / B |

comply with the following European Directive:

| 2006/42/EC | Machinery |
|------------|-----------|
|------------|-----------|

Compliance with the above-mentioned Directive has been verified by a type test based on the following standards:

| DIN EN 60947-5-3: 2014 | Low voltage switchgear and controlgear – Part 5-3:<br>Control circuit devices and switching elements – Requirements for<br>proximity devices with defined behaviour under fault conditions. |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| DIN EN ISO 13849-2: 2013 | Safety of machinery – Safety-related parts of control systems –<br>Part 2: Validation |
|--------------------------|---------------------------------------------------------------------------------------|
|--------------------------|---------------------------------------------------------------------------------------|

| GS-ET 14: 2015 | Additional requirements for the testing and certification for<br>proximity switches for safety functions |
|----------------|----------------------------------------------------------------------------------------------------------|
|----------------|----------------------------------------------------------------------------------------------------------|

Product quality is monitored in accordance with a certified quality management system which complies with  
DIN EN ISO 9001.

According to the Machinery Directive 2006/42/EC, Mr. Ralph Bräuninger, Am Zeller Pfad 1, D-75242 Neuhausen, is authorised agent for  
technical documentation.

This declaration does not contain any assurance of properties.  
The safety instructions in the product documentation provided must be observed.

Neuhausen, 14 Jan. 2016

Dipl.-Ing. Johannes Mikowitsch  
General Manager

Dipl.-Ing. (FH) Gert Götter  
Acting Head of QC

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