

## 1. Purpose

Automated systems with dangerous machine functions require guards to ensure that the operating personnel are not endangered. Doors in these guards must be equipped with interlocks, which prevent the execution of dangerous machine functions as long as the protective door is open.

## 2. Function

Safety door handles with integral SIDENT safety switch are designed and certified as interlocking device for safety doors in accordance with control category 4 to DIN EN 13849-1.

Specific benefits: Safety switch is equipped with high switching distance (20mm). This allows easy mounting and safe operation by mechanical tolerances. Further advantages are insensitivity to vibration and pollution.

The safety doors can be opened and closed from the outside by turning the door handle. When the door is closed, the handle clicks into position.

The SIDENT safety switch operates according to the identification principle together with the individually coded actuating element (transponder) fitted to the door handle latch. Release to the safety circuit of the system is given in the closed position only. The system is to a very large extent safe from manipulation due to the 6-digit safety code which is issued only once.

The evaluation of the SIDENT safety code undergoes a two-channel analysis. The two channels supervise each other on a reciprocal basis. Each channel has got one output with two output transistors.

The SIDENT/IV-40fv-1111ZI1D (Ref. no. 13.14-47) safety switch is equipped with another output for position indication. This output is to indicate the active switch for enabling the localisation of an open door with a PLC when safety switches of a safety circuit are mounted in series.

A safety PLC, a safety door monitor, or alternatively a safety relay serve as evaluation device and power supply for the SIDENT. Usually, the supply of the outputs will be clocked for this purpose. Cross circuits between output and supply and/or GND have to be detected and a switching-on has to be prevented.

A supplied mounting plate allows easy mounting of the safety door handle system at lattice doors. This also allows fixing on Bosch EcoSafe® profiles.

The safety door handle can be mounted on right-hinged doors and, after reassembly, also on left-hinged doors.

### 2.1 Escape route function with panic bar

The safety door handle system is equipped with a panic bar which serves to open the safety door from the inside. Thus this door can not be closed from the inside.

### 2.2. Protection against accidental closing

A locking tag prevents the safety door from being accidentally closed. The locking tag is essential to protect installation and maintenance personnel working on plant where not all parts are readily visible. It accepts up to three padlocks.

Please order a locking tag for versions 43.20-05, -06 (right- or left-hinged doors) as accessory.

## 2.3 Connector cover plate

A cover plate, which is available as accessory, covers the connector and protects the connecting lead against manipulation.

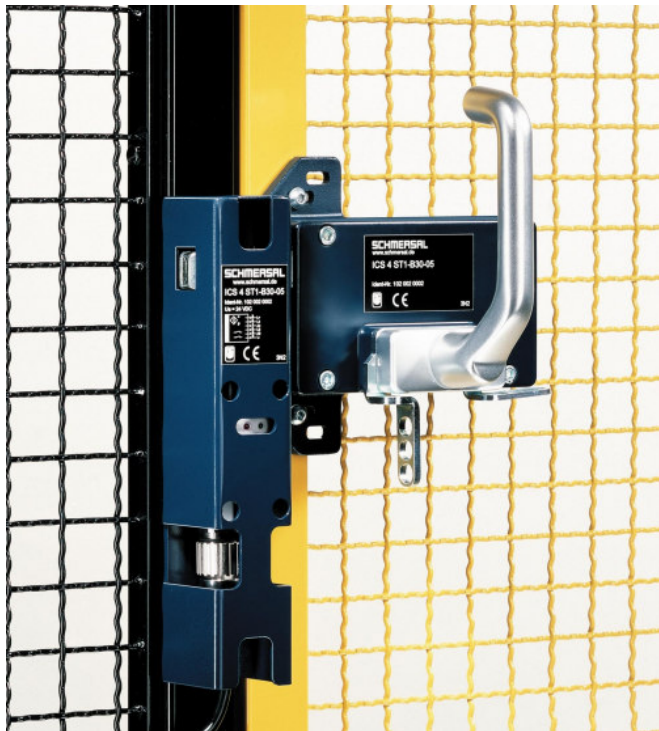


Fig. 1: Safety door handle system at safety lattice door – door hinge right, with locking tag



### Remark

Please see also the SIDENT descriptions  
GA 13.14-33, -45 -49, respectively  
GB 13.14-47.



Figure 2: SIDENT Safety Switch

### 3 Versions with panic bar

#### 3.1 Door hinge right with panic bar TGY/r1f-Sid4-1.3 (Ref. no. 43.20-05) and/or TGY/r1f-Sid4m-2.3 (Ref. no. 43.20-06) (as delivered)

#### 3.2 Door hinge left with panic bar TGY/r1f-Sid4-1.3 (Ref. no. 43.20-05) and/or TGY/r1f-Sid4m-2.3 (Ref. no. 43.20-06) (reassembly by user)

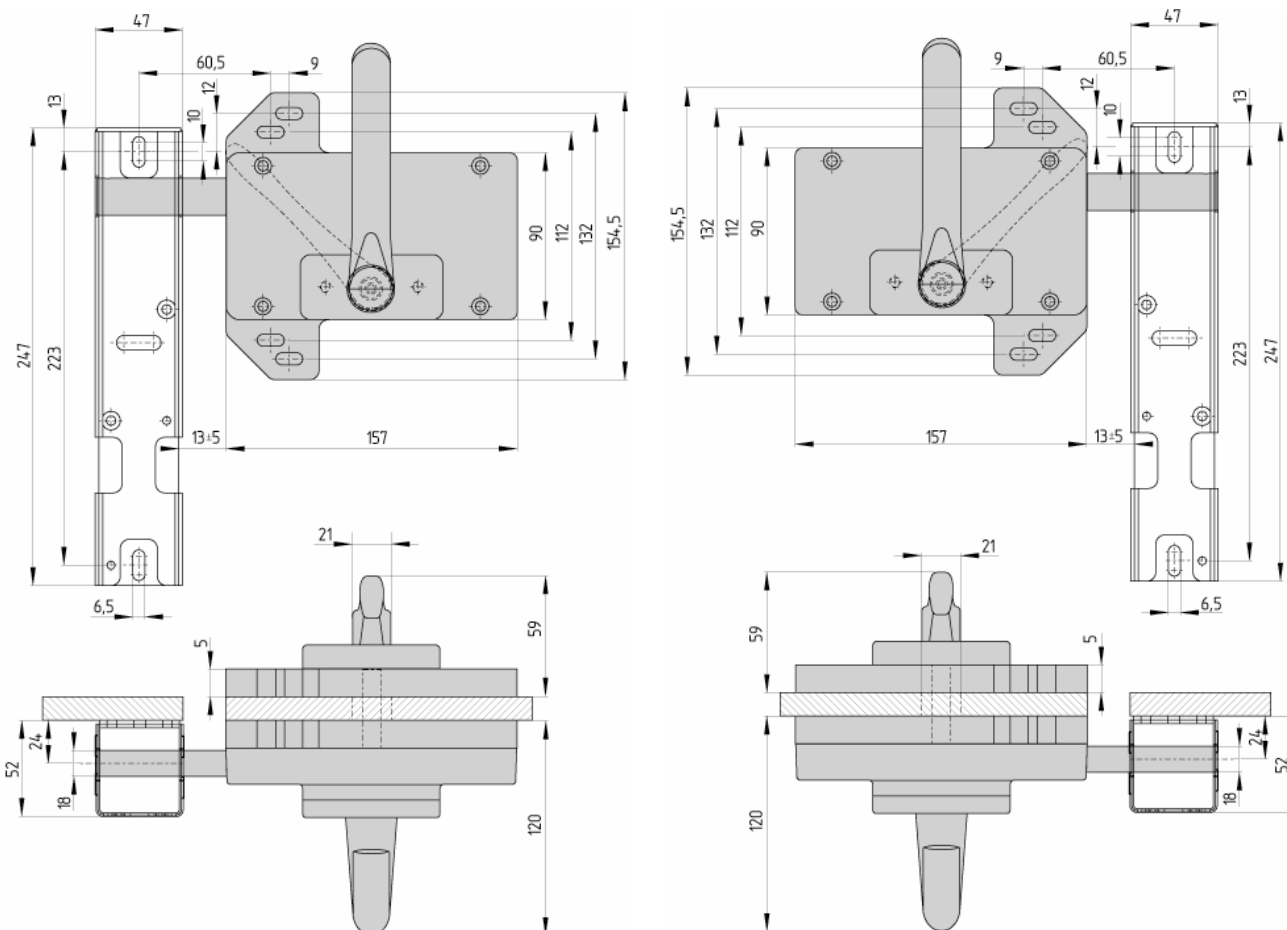


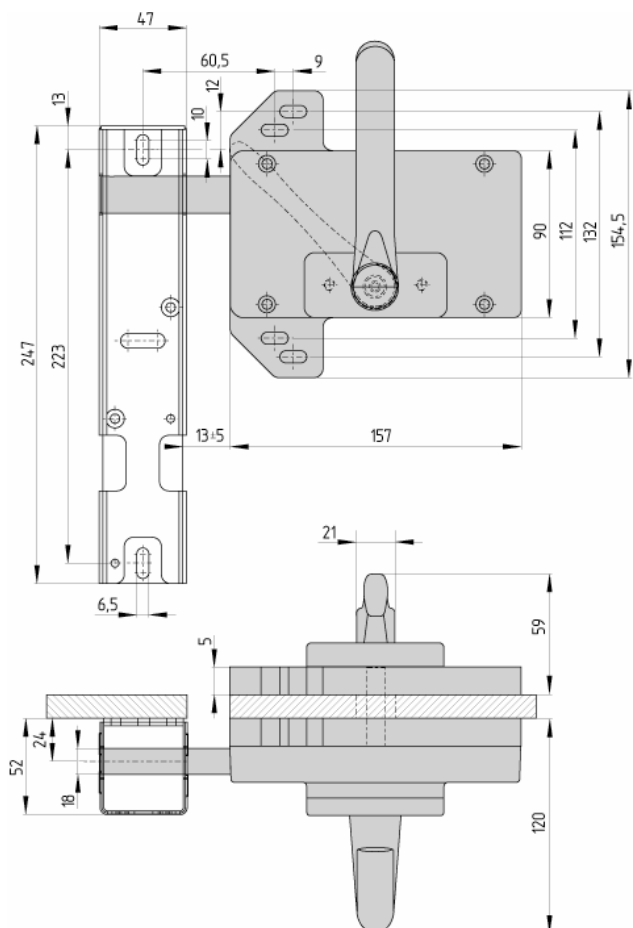
Figure 3: Dimensions of the version with panic bar

#### Features

- Metal housing with integral safety switch SIDENT for plug connection
- Control category 4 in accordance with DIN EN ISO 13849-1
- Allows connection also with unshielded lead
- Insensitive against shock, vibration and dirt
- Bolt supplied with mounting plate for easy mounting
- Shear force  $\geq 67,000$  N
- Allows lateral shift of  $\pm 5$  mm
- Door handle clicks in closed position
- Panic bar supplied with mounting plate for easy mounting
- Possibility of reassembly for left-hinged doors
- Locking tag against accidental closing available (not included in delivery)
- Cover plate for protection against manipulation available as accessory

#### 4. Versions with panic bar and locking tag

##### 4.1. Door hinge right with panic bar TGY/r1fz-Sid4-1.3 TA right (Ref. no. 43.20-11-001) (as delivered)



##### 4.2. Door hinge left with panic bar TGY/r1fz-Sid4-1.3 TA left (Ref. no. 43.20-11-002) (as delivered)

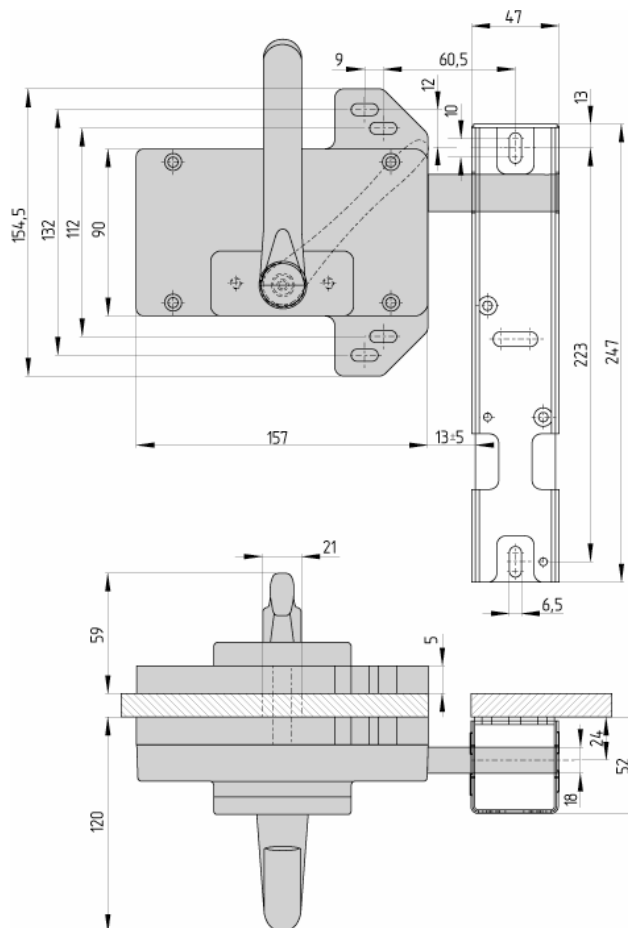


Figure 4: Dimensions of version with panic bar and locking tag

#### Features

- Metal housing with integral safety switch SIDENT for plug connection
- Control category 4 in accordance with DIN EN ISO 13849-1
- Allows connection also with unshielded lead
- Insensitive against shock, vibration and dirt
- Bolt supplied with mounting plate for easy mounting
- Shear force  $\geq 67.000$  N
- Allows lateral shift of  $\pm 5$  mm
- Door handle clicks in closed position
- Panic bar supplied with mounting plate for easy mounting
- Possibility of reassembly for left-hinged or right-hinged doors
- For changing the door hinge from the right to the left and vice versa a special locking tag, included in delivery, is necessary
- Cover plate for protection against manipulation available as accessory

## 5. Versions with two door handles and locking tag

### 5.1. Door hinge right with two door handles TGY/r1gz-Sid4-1.3 TA right (Ref. no. 43.20-12-001) (as delivered)

### 5.2. Door hinge left with two door handles TGY/r1gz-Sid4-1.3 TA left (Ref. no. 43.20-12-002) (as delivered)

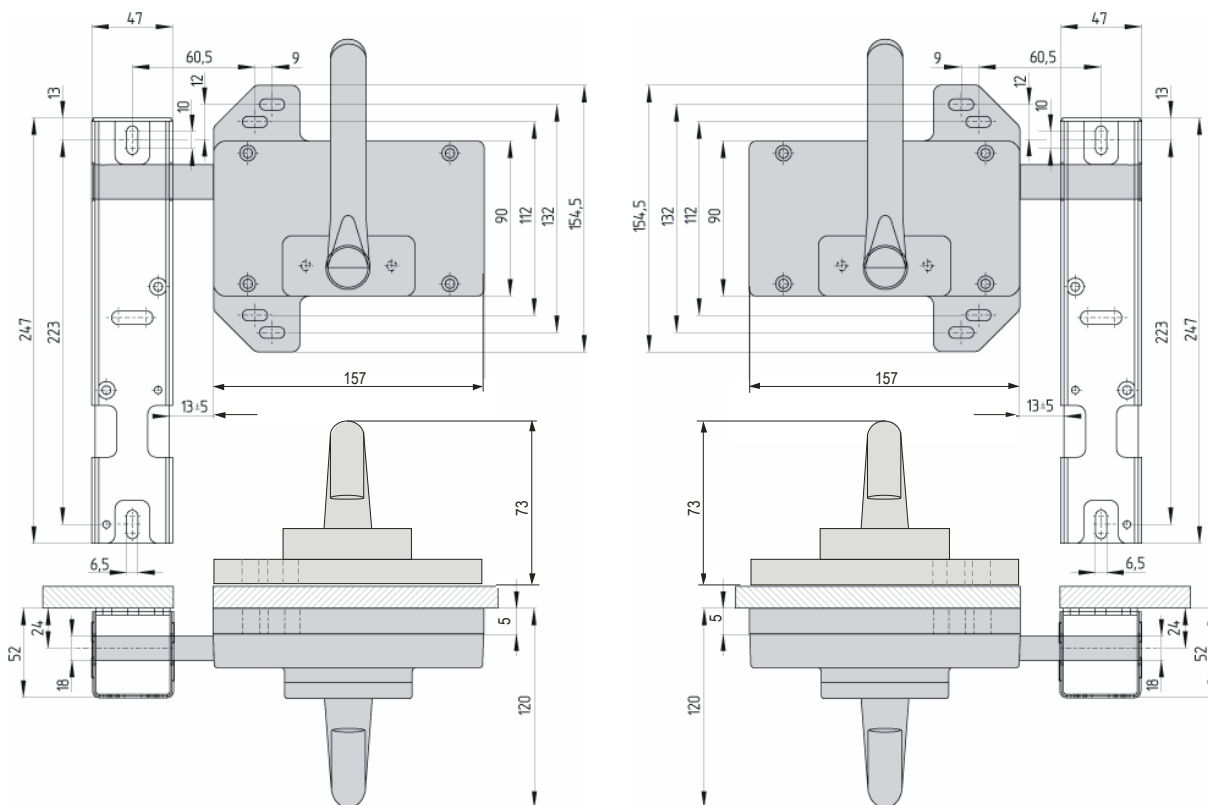


Figure 5: Dimensions of version with two door handles

## Features

- Metal housing with integral safety switch SIDENT for plug connection
- Control category 4 in accordance with DIN EN ISO 13849-1
- Allows connection also with unshielded lead
- Insensitive against shock, vibration and dirt
- Bolt supplied with mounting plate for easy mounting
- Shear force  $\geq 67.000$  N
- Allows lateral shift of  $\pm 5$  mm
- Door handle clicks in closed position
- Two door handles supplied with mounting plate for easy mounting
- Possibility of reassembly for left-hinged or right-hinged doors
- For changing the door hinge from the right to the left and vice versa a special locking tag, included in delivery, is necessary

## 6. Accessories

### 6.1. Locking tag against accidental closing

A locking tag against accidental closing can be mounted at the safety door handle. It accepts up to three padlocks. The locking tag has to be selected as accessory device depending on whether the door hinge is positioned on the right or on the left:

Locking tag for door hinge right: TGZ/r1/SPr-1.3  
(Ref. no. 43.20-78)

Locking tag for door hinge left: TGZ/r1/SPl-1.3  
(Ref. no. 43.20-79)

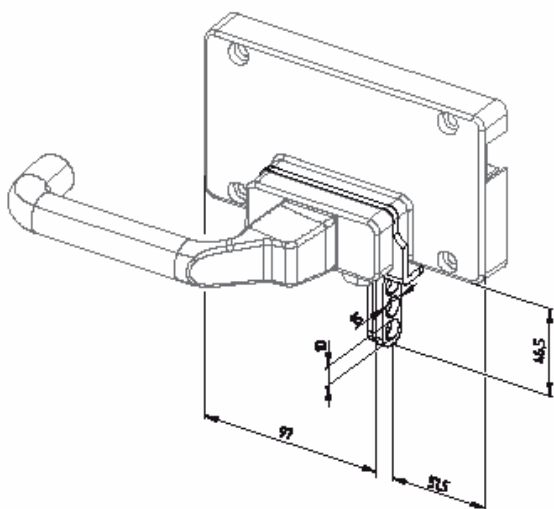


Fig. 6: Dimensions of the locking tag  
(version for door hinge left)

### 6.2. Cover plate against manipulation TGZ/r1/AP-1.3 (Ref. no. 43.20-77)

The cover plate, available as accessory device, protects the connector of the SIDENT safety switch against manipulation. It is mounted on the SIDENT housing with Pop-rivets or with one-way screws.

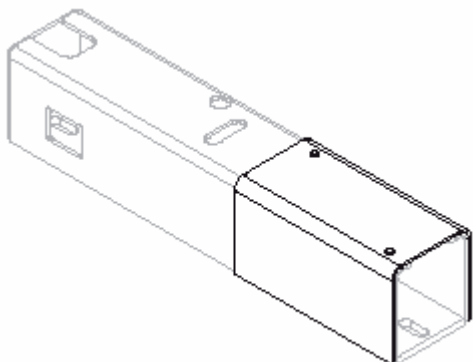


Fig. 7: Cover plate mounted on housing

## 7. Spare parts

### 7.1. Mounting plate for the door handle TGZ/r1/MP-1.3 (Ref. no. 43.20-75)

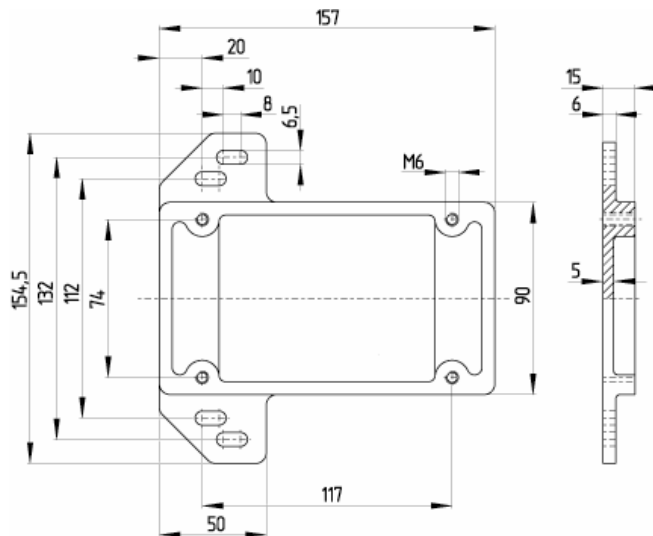


Fig. 8: Dimensions of the mounting plate

### 7.2. Mounting plate for the panic bar or the second door handle TGZ/r1f/MP-1.3 (Ref. no. 43.20-76)

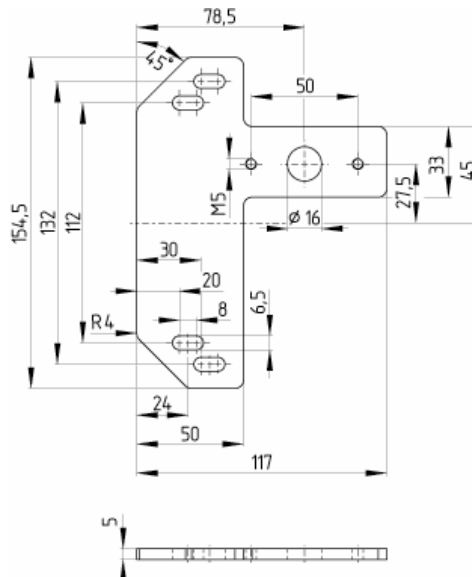


Fig. 9: Dimensions of the mounting plate

## 8. Notes



### Warning

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



### Danger

- SIDENT safety switches are used for the protection of individuals. Inappropriate installation or manipulations can lead to heavy injuries or to the death of persons.



### Warning

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



### Note

- For mounting the SIDENT safety switch in the safety door handle system, one-way screws or rivets (e. g. blind rivets) should be used in order to protect SIDENT against manipulation.
- An extra cover plate, available as accessory, shields the connector and protects the connecting lead from manipulation and should be mounted with one-way screws or rivets (e. g. blind rivets).



### Attention


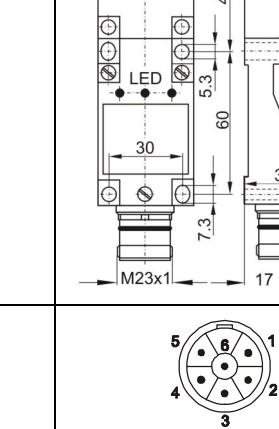
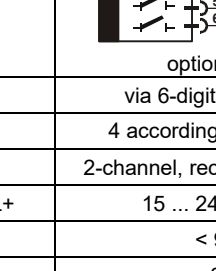
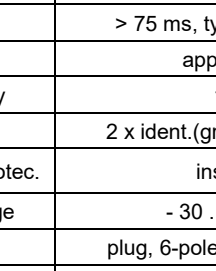
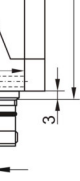
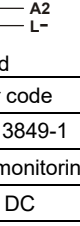
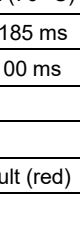
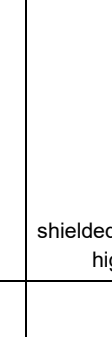
- The connection of SIDENT must take place in a voltage-free state.
- When connecting inductive loads to the SIDENT, suitable protective circuits have to be used.
- When using a common power supply, all connected inductive loads have to be provided with suitable interference units.
- In accordance with the relevant standards and regulations, the load voltage source has to 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 safety switch shielded or unshielded leads may be used. For strong interference voltages (inductive or capacitive), however, we recommend to use shielded leads.
- The use of very long leads requires that the Ohm's resistance of the lead and the resulting voltage loss are taken into consideration.


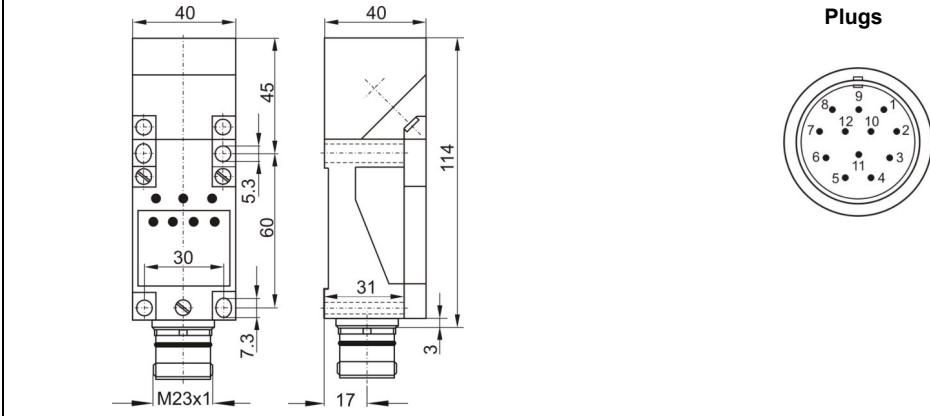
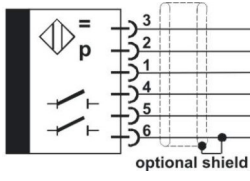
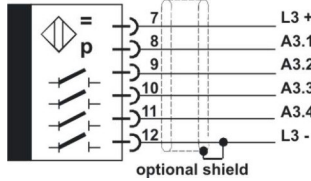


### Attention


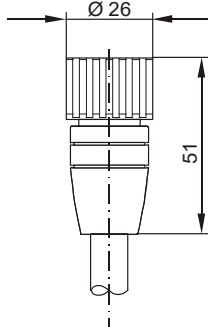
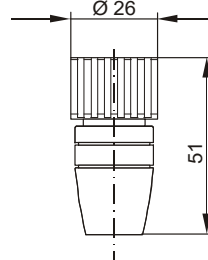
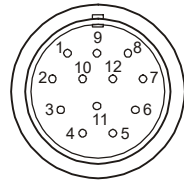
- When connecting inductive loads directly, e. g. contactors, these must be connected with a suitable cut-off diode for damping the interrupting voltages of the coil.
- RC elements or varistors are not suitable for this.
- Without suitable preventive measures it may come to irreversible damages of the output stages.

## 9. Technical data

Designation	Safety switch category 4	Connecting lead	Connecting lead
Type	SIDENT/IV-40fv114n20-11Z1C	VLG6E/6S/X-1	VLG6E/6/X-1
Ref. no.	13.14-33	20.18-60	20.18-61
Switching distance, hysteresis	20 mm, < 15%	-	-
Assured switching-off distance	35 mm	-	-
Design, housing material	rectangular 40x40x114 mm, plastic	metal	metal
Mounting specification	non-flush	-	-
Protection rating, weight	IP 67, 250 g	IP 65	IP 65
Protective insulation 	prot. class II acc. to IEC 947	prot. class II acc. to IEC 947	prot. class II acc. to IEC 947
Dimensions		 shielded version with especially high noise immunity	
Connectors			
Wiring	 optional shield	1: green    5: grey 2: yellow    6: white 3: brown    shield: black 4: pink	1: green    5: grey 2: yellow    6: white 3: brown 4: pink
Identification	via 6-digit number code	-	-
Control category	4 according to EN 13849-1	-	-
Configuration	2-channel, reciprocal monitoring	-	-
Operating voltage range L+	15 ... 24 ... 30 V DC	-	-
Current consumption	< 90 mA	-	-
Operating mode	2 NO	-	-
Input voltage L1, L2	12 ... 24 ... 30 V DC, can be clocked	-	-
Output voltage A1, A2	min. $U_{Lx} - 3 \text{ V}$ (400 mA); typically $U_{Lx} - 1.75 \text{ V}$ (100 mA)	-	-
Output current	< 400 mA per output (40 °C) < 200 mA per output (70 °C)	-	-
Response time	> 150 ms, typically 185 ms	-	-
Voltage drop-out time	> 75 ms, typically 100 ms	-	-
Switch-on delay	approx. 2 s	-	-
Max. operating frequency	1 Hz	-	-
Indicators	2 x ident.(green), fault (red)	-	-
Rev. polarity, short circuit protec.	installed	-	-
Ambient temperature range	- 30 ... + 70 °C	- 30 ... + 70 °C	- 30 ... + 70 °C
Connection	plug, 6-pole, Coninvers RC	socket, 6-pole, Coninvers RC	socket, 6-pole, Coninvers RC
Contact connection	-	crimp contacts	crimp contacts
Lead length / cross section	max. 300 m, with/without shield	6 x 0.5 mm <sup>2</sup>	6 x 0.5 mm <sup>2</sup>

Designation	Safety switch category 4	
Type	SIDENT/IV-40fv1111ZI1D	
Ref. no.	13.14-47	
Switching distance, hysteresis	20 mm, < 15%	
Assured switching-off distance	35 mm	
Design, housing material	rectangular 40 x 40 x 114 mm, plastic	
Installation specification	non-flush	
Protection rating, weight	IP 67, 300 g	
Protective insulation 	protection class II acc. to IEC 947	
Dimensions		
Technical data	Safety-related part	Position recognition
Wiring		
Identification	via 6-digit number code	
Control category	4 acc. to EN 13849-1	-
Structure	2-channel, reciprocal monitoring	
Operating voltage range L+	15 ... 24 ... 30 V DC	-
Operating voltage range L3+	-	15 ... 24 ... 30 V DC
Current consumption	< 90 mA	< 45 mA
Operating mode	2 NO	4 NO
Input voltage L1, L2	12 ... 24 ... 30 V DC, can be clocked	-
Output voltage A1, A2	min. $U_{L1,2} - 3 \text{ V}$ (400 mA); typ. $U_{L1,2} - 1.75 \text{ V}$ (100 mA)	-
Output voltage A3.1 ... A3.4	-	type $U_{L3} - 1.75 \text{ V}$ (100 mA)
Output current	< 400 mA per output (40 °C), < 200 mA per output (70 °C)	
Response time	> 150 ms, typ. 185 ms	typ. 10 ms
Drop-out time	> 75 ms, typ. 100 ms	pulse prolongation typ. 200 ms
Switch-on delay	approx. 2 s	approx. 1 s
Max. operating frequency	1 Hz	-
Movement speed	-	max. 1m/s
Indicators	2 x identification (green), 1 x fault (red)	4 x position (green)
Rev. polarity, short circuit protec.	installed	
Ambient temperature range	- 30 ... + 70 °C	
Connection	plug, 12-pole, Coninvers	
Lead length / cross section	max. 300 m, with / without shield	



Designation	Connecting lead	Connector																								
Type	VLG 12E/12/X-3	JKY1aZ-O-2																								
Ref. no.	20.18-55	13.99-48																								
Housing material	metal	metal																								
Protection rating	IP 65	IP 65																								
Protective insulation 	protection class II acc. to IEC 947																									
Dimensions																										
Connectors																										
Pin assignment	<table border="0"> <tr> <td>1: white</td> <td>(A1)</td> <td>7: blue</td> <td>(L3+)</td> </tr> <tr> <td>2: brown</td> <td>(L1)</td> <td>8: red</td> <td>(A3.1)</td> </tr> <tr> <td>3: green</td> <td>(L+)</td> <td>9: black</td> <td>(A3.2 – not used)</td> </tr> <tr> <td>4: yellow</td> <td>(L2)</td> <td>10: purple</td> <td>(A3.3 – not used)</td> </tr> <tr> <td>5: grey</td> <td>(A2)</td> <td>11: grey/pink</td> <td>(A3.4 – not used)</td> </tr> <tr> <td>6: pink</td> <td>(L-)</td> <td>12: red/blue</td> <td>(L3-)</td> </tr> </table>		1: white	(A1)	7: blue	(L3+)	2: brown	(L1)	8: red	(A3.1)	3: green	(L+)	9: black	(A3.2 – not used)	4: yellow	(L2)	10: purple	(A3.3 – not used)	5: grey	(A2)	11: grey/pink	(A3.4 – not used)	6: pink	(L-)	12: red/blue	(L3-)
1: white	(A1)	7: blue	(L3+)																							
2: brown	(L1)	8: red	(A3.1)																							
3: green	(L+)	9: black	(A3.2 – not used)																							
4: yellow	(L2)	10: purple	(A3.3 – not used)																							
5: grey	(A2)	11: grey/pink	(A3.4 – not used)																							
6: pink	(L-)	12: red/blue	(L3-)																							
Important remark	<b>Insulate terminals which are not in use!</b>																									
Ambient temperature range	- 30 ... + 70 °C																									
Cross section	12 x 0.5 mm <sup>2</sup>	-																								
Connection	socket, 12-pole, Coninvers RC	socket, 12-pole, Coninvers RC																								
Contact connection	solder contacts	crimp contacts																								
Lead length	max. 300 m	-																								

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

From mid-2021 a proposal by the EU Commission for a revised Machinery Directive (206/42/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.

## 10. Order data

**TGY/r1f-Sid4-1.3** Ref. no. 43.20-05  
Safety door handle with SIDENT/IV-40fv114n20-11Z1C (Ref. no. 13.14-33), including mounting plate, with panic bar, for door hinges right + left

**TGY/r1f-Sid4m-2.3** Ref. no. 43.20-06  
Safety door handle with SIDENT/IV-40fv1111Z11D (Ref. no. 13.14-47), with output for position indication, including mounting plate, with panic bar, for door hinges right + left

**TGY/r1fz-Sid4-1.3 TA right** Ref. no. 43.20-11-001  
Safety door handle with SIDENT/IV-40fv114n20-11Z1C (Ref. no. 13.14-33), including mounting plate, with panic bar, for door hinges right, with locking tag

**TGY/r1fz-Sid4-1.3 TA left** Ref. no. 43.20-11-002  
Safety door handle with SIDENT/IV-40fv114n20-11Z1C (Ref. no. 13.14-33), including mounting plate, with panic bar, for door hinges left, with locking tag

**TGY/r1gz-Sid4-1.3 TA right** Ref. no. 43.20-12-001  
Safety door handle with SIDENT/IV-40fv114n20-11Z1C (Ref. no. 13.14-33), including mounting plate, with two door handles, for door hinges right, with locking tag

**TGY/r1gz-Sid4-1.3 TA left** Ref. no. 43.20-12-002  
Safety door handle with SIDENT/IV-40fv114n20-11Z1C (Ref. no. 13.14-33), including mounting plate, with two door handles, for door hinge left, with locking tag

### 10.1. Accessories

**TGZ/r1/AP-1.3** Ref. no. 43.20-77  
Cover plate

**TGZ/r1/SPr-1.3** Ref. no. 43.20-78  
Locking tag for door hinge right

**TGZ/r1/SPI-1.3** Ref. no. 43.20-79  
Locking tag for door hinge left

### 10.2. Spare Parts

**TGZ/r1/MP-1.3** Ref. no. 43.20-75  
Mounting plate for door handle

**TGZ/r1f/MP-1.3** Ref. no. 43.20-76  
Mounting plate for panic handle

### 10.3. Connecting leads

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

**VLG 6E/6S/X-1** Ref. no. 20.18-60  
Shielded lead, 6 x 0.5 mm<sup>2</sup>, with especially high noise immunity

**VLG 6E/6/X-1** Ref. no. 20.18-61  
Unshielded lead, 6 x 0.5 mm<sup>2</sup>

**VLG 12E/12/X-3** Ref. no. 20.18-55  
Unshielded lead, 12 x 0.5 mm<sup>2</sup>, with 12-pole Coninvers connector, straight outlet, crimp connection

### 10.4. Connectors

**JKYIaZ-O-2** Ref. no. 13.99-48  
Coninvers connector, coupling, series RC, straight outlet, 12-pole, crimp contacts for 0.5 mm<sup>2</sup>, without connecting lead with especially high noise immunity

Subject to technical changes!

We are certified according to DIN EN ISO 9001.