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i10 Lock Safety Locking Devices

Highly flexible with narrow shape



## Highly flexible with narrow shape





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The i10 Lock safety switch forms part of the product family of safety locking devices. Its narrow shape enables it to be mounted easily and directly on guard door frames. Different switching

## **Product description**

elements and actuators make it very flexible, mechanically and electrically. As a result, this safety switch can be adapted to the application in question.

## At a glance

- Narrow plastic housing
- Either rigid or mobile actuators
- 3 cable entry glands M20 x 1.5 or M12 plug connector

# Your benefits

- Simple mounting without additional mounting plate directly on the aluminum profile of the guard door frame
- High flexibility of the electrical connection due to three cable entry glands
- Improved diagnostics due to additional signaling contacts

- Locked by spring force and magnetic force
- Locking and door monitoring
- Practical adjustment: With choice of actuators – suitable for any door
- Different switching elements enable the appropriate solution for electrical installation
- Quick device exchange due to variants with M12 plug connector

# **Detailed** technical data

You can find more detailed data in the operating instructions. Download at www.mysick.com.

### Locking type: electrical

Туре	i10-E0233 Lock	i10-E0253 Lock	i10-E0313S02 Lock	i10-E0453 Lock	i10-E0454 Lock		
Housing material		Glass-fiber reinforced thermoplastic					
Enclosure rating	IP 67						
Safety-related parameters B <sub>104</sub> parameter		$3 \times 10^6$ switching cycles, with small load					
Ambient operating temperature from to			-20 °C +55 °C				
Approach speed			≤ 20 m/min				
Actuation force			≥ 10 N				
Locking force			≤ 1,300 N				
Actuation frequency			≤ 7,000 /h				
Switching principle		Slow	action switching ele	ement			
Number of positive action N/C solenoid monitoring contacts		2					
Number of N/O solenoid monitoring contacts	1 0						
Number of positive action N/C door monitoring contacts	(	D	1		2		
Number of N/O door monitoring contacts	0	:	1		0		
Number of N/C door monitoring contacts	:	1		0			
Usage category in compliance with IEC/EN 60947-5-1			AC-15/DC-13				
Rated operating current (voltage)		```	30 V AC) 4 V DC)		1 A (24 V AC) 1 A (24 V DC)		
Rated insulation voltage U <sub>i</sub>		25	0 V		30 V		
Rated impulse withstand voltage U		2,500	D V AC		1,500 V AC		
Switching voltage (switching current)			$\geq$ 12 V DC (10 mA)				
Switching current (switching voltage)			$\geq$ 1 mA (24 V DC)				
Solenoid operating voltage		24	V (20.4 V 26.4 V)	DC			
Power consumption			≤ 8 W				
Duty cycle	100 %						
Connection type	Cable gland Connector						
Number of cable glands x size of the screwed joint	3 x M20 1 x M12, 8-pir						
Connection cable cross-section		O	0.34 mm² 1.5 mm	1 <sup>2</sup>			
Short-circuit protection		4 A	gG		1 A gG		
Weight		0.4	6 kg		0.5 kg		

## Locking type: mechanical

Туре	i10-M0233 Lock	i10-M0253 Lock	i10-M0453 Lock	i10-M0454 Lock		
Housing material	Glass-fiber reinforced thermoplastic					
Enclosure rating	IP 67					
Safety-related parameters B <sub>10d</sub> parameter	3 x 10 <sup>6</sup> switching cycles, with small load					
Ambient operating temperature from to		-20 °C	. +55 °C			
Approach speed		≤ 20 r	n/min			
Actuation force		≥ 1	0 N			
Locking force		≤ 1,3	00 N			
Actuation frequency		≤ 7,0	00 /h			
Switching principle		Slow action swi	tching element			
Number of positive action N/C solenoid monitoring contacts		2	2			
Number of N/O solenoid monitoring contacts	1		0			
Number of positive action N/C door monitoring contacts	(	)	2			
Number of N/O door monitoring contacts	0 1 0					
Number of N/C door monitoring contacts	1	1	(	)		
Usage category in compliance with IEC/EN 60947-5-1		AC-15/	DC-13			
Rated operating current (voltage)		4 A (230 V AC) 4 A (24 V DC)		1 A (24 V AC) 1 A (24 V DC)		
Rated insulation voltage U <sub>i</sub>		250 V		30 V		
Rated impulse withstand voltage ${\rm U}_{\rm imp}$		2,500 V AC		1,500 V AC		
Switching voltage (switching current)		≥ 12 V D0	C (10 mA)			
Switching current (switching voltage)		≥ 1 mA (	24 V DC)			
Solenoid operating voltage		24 V (20.4 V	26.4 V) DC			
Power consumption	≤ 8 W					
Duty cycle	100 %					
Connection type	Cable gland Connector					
Number of cable glands x size of the screwed joint	3 x M20 1 x M12, 8-pin					
Connection cable cross-section	0.34 mm <sup>2</sup> 1.5 mm <sup>2</sup>					
Short-circuit protection		4 A gG		1 A gG		
Weight		0.46 kg		0.5 kg		

# **Ordering information**

#### • Locking type: electrical

Solenoid monite	Solenoid monitoring contacts		Door monitoring contacts		Connection	Model name	Part no.	
Number of posi- tive action N/C	Number of N/O	Number of posi- tive action N/C	Number of N/O	Number of N/C	type			
	1	0	0	1		i10-E0233 Lock	6022585	
		0	1	1			i10-E0253 Lock	6020536
2	0	1	1 0	Cable gland	i10-E0313S02 Lock	6011368		
	0	2	0	0		i10-E0453 Lock	6020598	
		2	0	0	Connector	i10-E0454 Lock	6045056	

#### • Locking type: mechanical

Solenoid monite	oring contacts	Door	monitoring cont	acts	Connection	Model name	Part no.
Number of posi- tive action N/C	Number of N/O	Number of posi- tive action N/C	Number of N/O	Number of N/C	type		
	1	0	0	1		i10-M0233 Lock	6022580
2		0	1	1	Cable gland	i10-M0253 Lock	6027397
2	0	2	0	0		i10-M0453 Lock	6029934
		2 0	0	Connector	i10-M0454 Lock	6045055	

# **Application**

You can find more applications using the application finder at www.mysick.com.

- Monitoring of rotatable, laterally sliding or removable protective devices
- · Personal protection for follow-on movements
- Process protection for automated production systems



Access protection on an assembly system

Access protection on an injection molding machine

# **Dimensional drawings**

i10-E0233 Lock, i10-E0253 Lock, i10-E0453 Lock, i10-M0233 Lock, i10-M0253 Lock, i10-M0453 Lock





28 <sup>+7\*</sup> 28 <sup>+2</sup> □31 ľħ μ. 1 .5 +7\* .5 <sup>+1.5</sup>1 - 11 I 3.5 29.1 50 42 领┝᠊᠊᠋᠊ᠿᢉᡃᡠ 199 144 ۲ M20x1.5 (3x) 22 Ð 0 16 30 42 40 10 3.5 8.5 \* In case of actuator with overtravel:

with overtravel: iE10-S4 and iE10-A4

i10-E0313S02 Lock

All dimensions in mm

# Electro-mechanical safety switches Safety locking devices

#### i10-E0454 Lock i10-M0454 Lock





\* In case of actuator with overtravel: iE10-S4 and iE10-A4

All dimensions in mm

# **Switching elements**

	Actuator in	Actuator removed	
	locked	unlocked	
Switching element 23	<ul> <li>♀</li> <li>↔ 41 مله 42</li> <li>↔ 33 • • • • 34</li> <li>↔ 21 مله 22</li> <li>↔ 12</li> </ul>	41 ° 42 33 – 34 21 ° 10 22 11 ° 10 12	$41 \circ^{9} 42$ 33 of to 34 21 \circ 1 \circ 22 11 \circ 1 \circ 12
Switching element 25	ب	$\begin{array}{c} 9\\ 41 \circ 1 \circ 42\\ 31 \circ 1 \circ 32\\ 21 \circ 1 \circ 22\\ 13 \circ \circ 14 \end{array}$	$41 \stackrel{\circ}{\underset{0}{0}} 42$ $31 \stackrel{\circ}{\underset{0}{0}} 22$ $21 \stackrel{\circ}{\underset{0}{0}} 22$ $13 \stackrel{\circ}{\underset{0}{0}} 14$
Switching element 31		$\begin{array}{c} 9\\ 41 \circ 1 \circ 42\\ 31 \circ 1 \circ 32\\ 21 \circ 1 \circ 22\\ 13 \circ \circ 14 \end{array}$	$41 \stackrel{\circ}{\underset{0}{\circ}} 42$ $31 \stackrel{\circ}{\underset{0}{\circ}} 22$ $21 \stackrel{\circ}{\underset{0}{\circ}} 22$ $13 \stackrel{\circ}{\underset{0}{\circ}} 14$
Switching element 45	ې ⊕ 41 مات 42 ⊕ 31 مات 32 ⊕ 21 مات 22 ⊕ 11 مات 12	۹ 41 <u>01</u> 0 31 31 21 <u>01</u> 0 22 11 10 12	41 <u>°</u> 1° 42 31 ° 1° 32 21 ° 1° 22 11 ° 1° 12

#### Switching element 23:

2 positive action N/C contacts + 1 N/O contact + 1 N/C as door contact

#### Switching element 25:

2 positive action N/C contacts + 1 N/O contact as door contact + 1 N/C as door contact

#### Switching element 31:

2 positive action N/C contacts + 1 N/O contact as door contact + 1 positive action N/C as door contact

#### Switching element 45:

2 positive action N/C contacts +

2 positive action N/C as door contacts

# **Connection diagram**

#### i10-E0454 Lock i10-M0454 Lock





## **Accessories**

#### Actuators

• Items supplied: Including two safety screws

Figure	Design	Actuation option	Method of actuation	Door radius	Туре	Part no.
a la	Angled	Rigid	-	≥ 1,000 mm	iE10-A1	5306535
a la	Angled	ngu	With overtravel	≥ 1,000 mm	iE10-A4	5308497
10	Radial	Semiflexible	Door hinged at top/ bottom	≥ 90 mm	iE10-R1	5306528
			Door hinged on left/ right	≥ 100 mm	iE10-R2	5306529
222		Rigid	-	≥ 1,000 mm	iE10-S1	5306527
-2-00	Straight	Rubber-mounted	-	≥ 1,000 mm	iE10-S2	5306530
12-22		Rigid	With overtravel	≥ 1,000 mm	iE10-S4	5308383

Lock

Figure	Remark	Property	Туре	Part no.
- Charles - Char	Lock for mechanical unlocking mechanism	Parallel closing	iE10-K2	5308270

# Alignment guide

Figure	Туре	Part no.
	iE10-G1	5318460

# Connecting cables

Figure	Direction of cable outlet	Cable length	Туре	Part no.
_	Straight	5 m	DOL-1208-G05MA	6020993
		10 m	DOL-1208-G10MA	6022152
		15 m	DOL-1208-G15MA	6022153
• •		30 m	DOL-1208-G30MA	6022242

# Cable gland

Figure	Туре	Part no.
	Cable gland M20	5309164

# **Dimensional drawings actuators**



26

12



16 All dimensions in mm

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28<sup>± 2</sup>

# i10 Lock

#### iE10-R2





iE10-S2





iE10-S1



iE10-S4





All dimensions in mm

## **Dimensional drawings lock**

## iE10-K2



The mechanical unlocking mechanism of the i10 Lock can easily be operated via a key. The lock on the front of the i10 Lock is fixed with two screws.

• Parallel closing locking mechanism

Fixing screws and two keys supplied with delivery.

# Dimensional drawings alignment guide





The metal alignment guide provides the actuator with a wider entry area into the safety switch. With the alignment guide, the safety switch is better protected against damage.

It can be secured to the safety switch with the two M3 x 34 self-tapping screws (screws supplied with delivery).

It can only be used in combination with actuators with overtravel (iE10-A4, iE10-S4).

It can not be used with special locking devices (i10-E0313S02), which already have a longer top entry overtravel.

All dimensions in mm

# **SICK** at a glance





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