BREMAS

BETTER SWITCHES

SAFETY SWITCHES

06

Selection diagram

Plastic or Metal actuators


AB


BB


CB


RB

Plastic or Metal head


TB


T


S5


SC

Bodies

Plastic


E10…I


E20…I


E40…I

Contact elements

01 1NO+1NC slow action
04 2NC slow action
08 2NC slow action (for pull-wire switches)

Cable entry

- Pg 13,5
- M20x1,5
- 1/2" NPT
- PG11
- M16x1,5
- M12 connector

DB

EB

IB

IB•50

FB

FB•50

FBR•50

Metal

E10…**M**

E30…**M**

E40…**M**

Product code structure

E10 **0** **01** **FB** **I** **50**

Series

E10	1 cable entry
E20	2 cable entry
E30	3 cable entry
E40	4 cable entry

Ingresso cavi

0	PG 13,5
1	M20x1,5
2	1/2" NPT
3	PG 11
4	M16x1,5

Contact element

01	1NO+1NC slow action
04	2NC slow action
…	

Opzioni

50	With Ø50 mm roller
P	With cable gland Pg13,5
Q	With cable gland Pg11
M12	With M12 connector
R	With membrane M20x1,5

Construction material

I	Plastic body / Metal head
M	Metal body / Metal head

Actuator type

AB	Steel plunger with reset
BB	Steel roller plunger with reset
…	

Note: Please verify the effective availability of a product before ordering.

Technical data

					TYPE	E100 / E200 / E300 / E400
Maximum operating frequency					operat./hour[1]	3600
Insulation resistance				500 V DC	MΩ	100
Dielectric strenght				50/60 Hz for 1'	V AC	2500[2]
Rated insulation voltage		Ui	IEC947-5-1		V AC	500
Rated thermal current		Ithe	IEC947-5-1		A	10
Rated operating current	Category AC15	Ie	IEC947-5-1/EN60947-5-1	24V	A	10
	A300			125V	A	6
				230 V	A	6
				400 V	A	3
Contact resistance			IEC255-7 cat.3	initial value	mΩ	25
Short circuit protective devices			IEC269 (IEC947-5-1)			
			fuse type gL or gG		A	10
Rated conditionals short circuit current			IEC947-5-1		A	1000
Pollution degree			IEC947-5-1		A	3
Protection degree			EN 60529			IP66
Protection against electric shock				plastic	class	II
				metal	class	I
Vibration resistance			IEC68-2-6	mm		0,35 ± 15% (10 ÷ 55 Hz ± 1 Hz)
Shock resistance			IEC68-2-27	11ms	g	30
Mechanical life					cycles	20.000.000
Electric life			at 250V AC 6A with resistance load cosφ=1		cycles	500.000
			at 250V AC 6A with inductive load cosφ=0,4		cycles	500.000
Distance between contacts			Snap action type		mm	2x1,25
			Low action type		mm	2x2
Terminals			Type			Screw with combined notch and retractable plate (notch Ph. Size 1)
			Screw			M3,5
			Protection degree			IP20
			Material			Steel class 8,8 / Galvanized
			Max screw tightening torque			120 (12,24)
			Max connecting capacity	rigid cable	mm²	2x1,5
				flexible cable	mm²	2x1,5
Terminal numbering						In accordance with EN50013
Air ambient temperature				operational	°C	-35 ÷ +85 (without formation of ice)
Relative umidity				operational		95% max

[1] One operation cycle means two movements, one to close and one to open as required by EN 60947-5.

[2] Between terminals of the same polarity; between terminals with different polarity; between live mechanical parts and ground; between live mechanical parts and non-current-carrying metal parts.

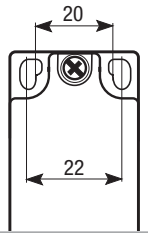
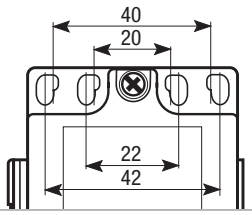
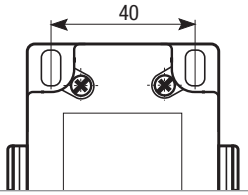
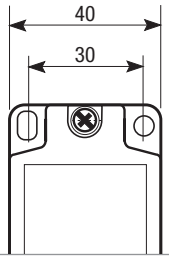
Certifications and Approvals

	c UL us LISTED	UKCA	CSA	IEC EN 60947
E100	•	•	•	+
E200	•	•	•	+
E300	•	•	•	+
E400	•	•	•	+

- UL approval file E72861
- CSA approval file 026716-0-000
- • Approved
- \+ Conforms to requirements

E100-E200 E300-E400 series

- Plastic or Metal body
- Plastic* or Metal head and actuators
- IP66 protection degree
- Contact elements with positive opening of the NC contact in accordance to IEC EN 60947-5-1 and VDE 0660-200

Series	Product	Fixing holes
E100		
E200		
E300		
E400		

* On key actuated switches

Cable inputs/outputs

Series	Nr.
E100	1 on the bottom 
E200	2 on the sides 
E300	2 on the sides + 1 on the bottom 
E400	1 on the bottom 

Type		Series
Pg 13,5	 Pg13,5	Ex00..
M20x1,5	 M20x1,5	Ex01..
1/2 NPT	 1/2 NPT	Ex02..
Pg 11	 Pg11	Ex03..
M16x1,5	 M16x1,5	Ex04..
M12 connector	 M12 connector	Ex00..M12

Actuation heads

Safety switches with reset

Group AB-BB

AB
Plunger

BB
Roller plunger

Group CB-RB

CB
Plastic roller lever, side actuation

RB
Reversible and adjustable lever with plastic roller

Group DB

DB
Plastic roller lever, vertical actuation

Group EB-IB-FB-FRB

EB
Straight lever with plastic roller

IB
Bent lever with plastic roller

IB•50
Bent lever with Ø50mm rubber roller

FB
Variable lenght lever with plastic roller

FB•50
Variable lenght lever with Ø50mm rubber roller

FRB•50
Adjustable lever with Ø50mm rubber roller

Key actuation safety switches

Group S5

S5
5 ways keys actuation

Pull wire safety switches

Group T

TB
Pull wire with reset

T
Pull wire without reset

Hinges operating safety switches

Group SC

SC
Metal pin

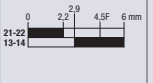
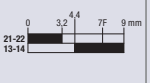
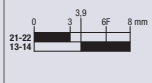
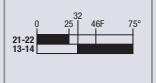
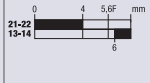
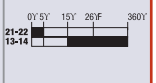
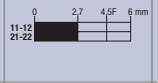
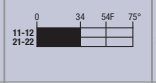
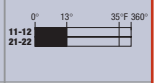
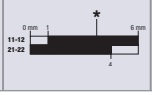
Contact elements

Protective screen

Protective natural polycarbonate screen to prevent the entry of materials and access to the test finger (IP20 – EN60529)

Mobile and fixed contacts

Ag/Ni mobile and fixed contacts galvanically separated (acc. IEC 947-5-1, EN 60204, VDE 0660, VDE 0113)

Contact unit	Actuator	Group AB-BB	Group CB-RB	Group DB	Group EB-IB-FB-FRB	Group S5	Group T	Group SC
01 1NO+1NC slow action	1NO+1NC slow action 21 13 Zb 22 14							
04 2NC slow action	2NC slow action 11 21 Y+Y 12 22							
08 2NC slow action	2NC slow action 11 21 12 22							

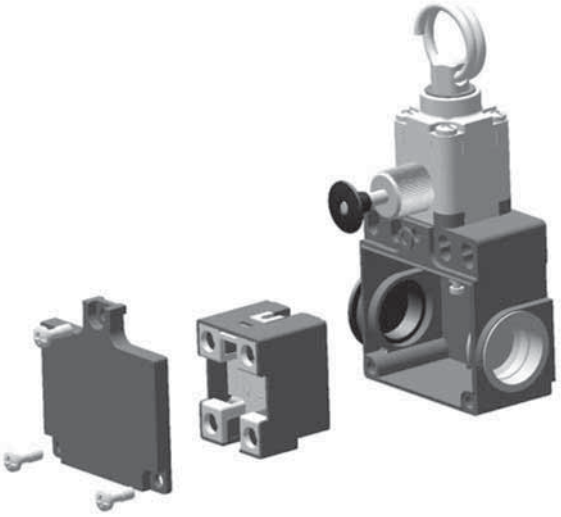
Opened contact

Closed contact

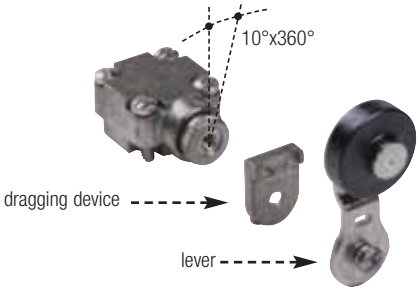
Pressure of the switch / Release of the switch

General characteristics

Safety switches are conceived for applications related to the protection of automated installations and are avaiable in 4 different product families: with reset,pull-wire,5 way key and for hinge actuation.



- thermoplastic or metal body
- IP66
- contact blocks with positive opening of the NC contact according to IEC EN 60947-5-1 e VD 0660-200



Adjustable levers

Possibility to adjust the lever in 10° steps for 360° by moving the lever and the dragging device.

Overturning levers

all the levers can be fastened on switches on straight or reverse side, to obtain two different work plans of the lever.

Safety switches with reset

Safety switches with reset

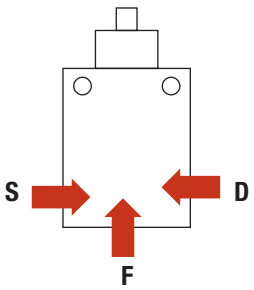
Switches **with reset** are safety appliances that guarantee the opening of the NC contact upon a single manoeuvre and its retention in that position with the locking head. This means that the activation of the switch will have no effect on the contact element until the reset button is pressed manually (the release or reset take place by pressing the blue reset button). The range is available for the **E100-200** series in both the thermoplastic and metal bodies, with metal head and **IP66** protection degree. Both versions are available with two types of contact blocks, 1NO + 1NC and 2NC, with slow action and positive opening of the NC contact

Applications

Escalators

Lifts

Lifting machines



Fixing

E100	20/22 mm
E200	20/22 and 40/42 mm

In conformity with standards

IEC EN 60947-5-1 • EN 60947-1 • UNI EN 1088
EN ISO 12100-1 • EN ISO 12100-2 • IEC 529 • EN 60529
VDE 0660-200 • VDE 0113 • EN 81-1 • EN 81-2

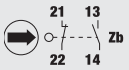
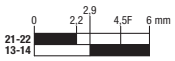
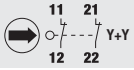
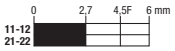
Cable entry

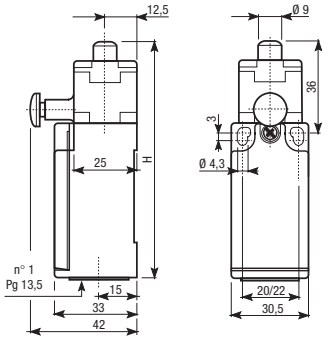
	F	S	D
E100	•		
E200		•	•

Thread	Series part no.	
Pg 13,5	E100	E200
M20x1,5	E101	E201
1/2" NPT (on request)	E102	E202
Pg 11 (on request)	E103	
M16x1,5 (on request)	E104	
M12 connector (on request)	E100/M12	E200/M12

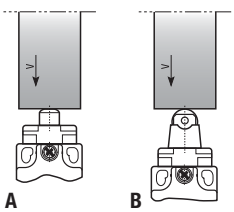
A

Steel plunger

Contact element		Cable entry				Contact travel
		PG 13,5		M20 x 1,5		
		Metal head Plastic body	Metal head Metal body	Metal head Plastic body	Metal head Metal body	
1NO+1NC slow action 	01	**E10001ABI**	**E10001ABM**	**E10101ABI**	**E10101ABM**	
2NC slow action 	04	**E10004ABI**	**E10004ABM**	**E10104ABI**	**E10104ABM**	
Weight	kg	0,16	0,245	0,16	0,245	
Pack	pcs	1	1	1	1	
H	mm	93,5	91	93,5	91	



Drive cam operating parameters

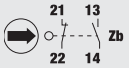
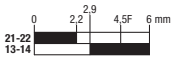
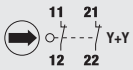
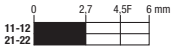


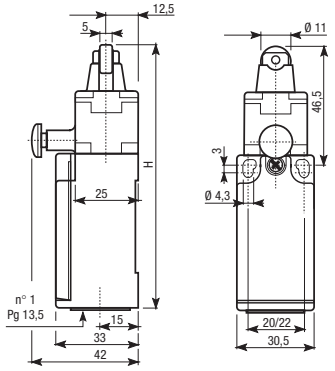
	V max (m/s)
Actuator A	0,5
Actuator B	0,5

Drive forces	
Minimum command force	9 N
Minimum forced opening force	28 N

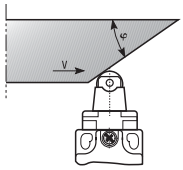
B

Steel roller plunger

Contact element		Cable entry: PG 13,5 – Metal head Plastic body	Cable entry: PG 13,5 – Metal head Metal body	Cable entry: M20 x 1,5 – Metal head Plastic body	Cable entry: M20 x 1,5 – Metal head Metal body	Contact travel
1NO+1NC slow action 	**01**	**E10001BBI**	**E10001BBM**	**E10101BBI**	**E10101BBM**	
2NC slow action 	**04**	**E10004BBI**	**E10004BBM**	**E10104BBI**	**E10104BBM**	
Weight	kg	0,165	0,255	0,165	0,255	
Pack	pcs	1	1	1	1	
H	mm	104	101,5	104	101,5	



Drive cam operating parameters

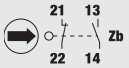
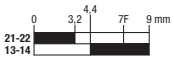
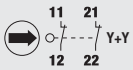


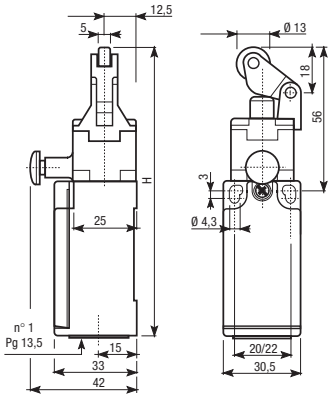
φ	V max (m/s)
20°	1
30°	0,5

Drive forces	
Minimum command force	9 N
Minimum forced opening force	28 N

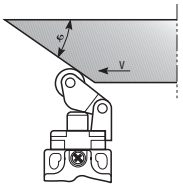
C

Thermoplastic roller lever, vertical actuation

Contact element		Cable entry				Contact travel
		PG 13,5		M20 x 1,5		
		Metal head Plastic body	Metal head Metal body	Metal head Plastic body	Metal head Metal body	
1NO+1NC slow action 	01	**E10001CBI**	**E10001CBM**	**E10101CBI**	**E10101CBM**	
2NC slow action 	04	**E10004CBI**	**E10004CBM**	**E10104CBI**	**E10104CBM**	
Weight	kg	0,165	0,255	0,165	0,255	
Pack	pcs	1	1	1	1	
H	mm	113,5	111	113,5	111	



Drive cam operating parameters

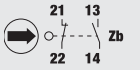
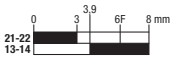
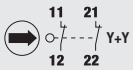
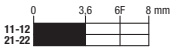


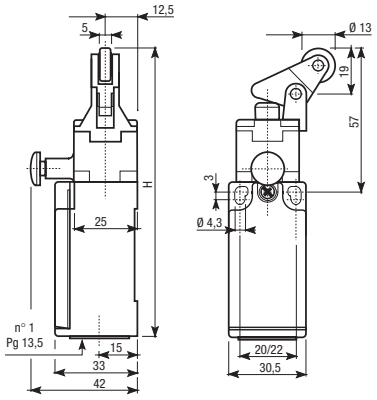
φ	V max (m/s)
20°	1
30°	0,5

Drive forces	
Minimum command force	9 N
Minimum forced opening force	26 N

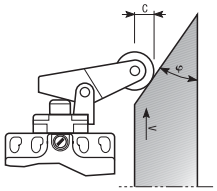
D

Thermoplastic roller lever, vertical actuation

Contact element		Cable entry: PG 13,5 – Metal head Plastic body	Cable entry: PG 13,5 – Metal head Metal body	Cable entry: M20 x 1,5 – Metal head Plastic body	Cable entry: M20 x 1,5 – Metal head Metal body	Contact travel
1NO+1NC slow action 	**01**	**E10001DBI**	**E10001DBM**	**E10101DBI**	**E10101DBM**	
2NC slow action 	**04**	**E10004DBI**	**E10004DBM**	**E10104DBI**	**E10104DBM**	
Weight	kg	0,165	0,255	0,165	0,255	
Pack	pcs	1	1	1	1	
H	mm	114,5	112	114,5	112	



Drive cam operating parameters

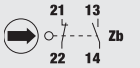
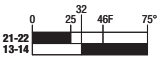
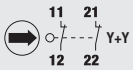
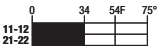


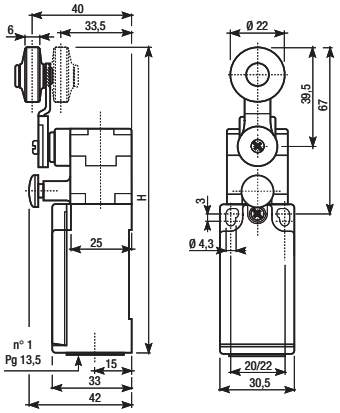
φ	V max (m/s)
20°	1
30°	0,5

Drive forces	
Minimum command force	9 N
Minimum forced opening force	26 N

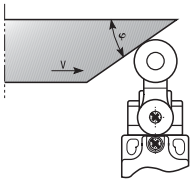
E

Thermoplastic roller lever

Contact element		Cable entry: PG 13,5 – Metal head Plastic body	Cable entry: PG 13,5 – Metal head Metal body	Cable entry: M20 x 1,5 – Metal head Plastic body	Cable entry: M20 x 1,5 – Metal head Metal body	Contact travel
1NO+1NC slow action 	01	E10001EBI	E10001EBM	E10101EBI	E10101EBM	
2NC slow action 	04	E10004EBI	E10004EBM	E10104EBI	E10104EBM	
Weight	kg	0,195	0,285	0,195	0,285	
Pack	pcs	1	1	1	1	
H	mm	124,5	122	124,5	122	



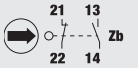
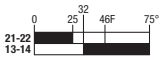
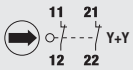
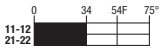
Drive cam operating parameters

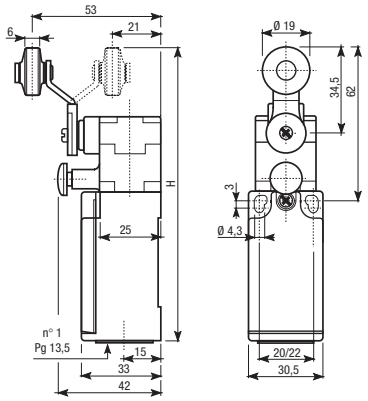


φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

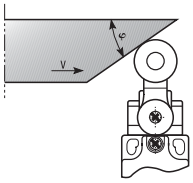
Drive forces	
Minimum command force	15 Ncm
Minimum forced opening force	35 Ncm

Thermoplastic roller lever

Contact element		Cable entry: PG 13,5 – Metal head Plastic body	Cable entry: PG 13,5 – Metal head Metal body	Cable entry: M20 x 1,5 – Metal head Plastic body	Cable entry: M20 x 1,5 – Metal head Metal body	Contact travel
1NO+1NC slow action 	**01**	**E10001IBI**	**E10001IBM**	**E10101IBI**	**E10101IBM**	
2NC slow action 	**04**	**E10004IBI**	**E10004IBM**	**E10104IBI**	**E10104IBM**	
Weight	kg	0,205	0,295	0,205	0,295	
Pack	pcs	1	1	1	1	
H	mm	119,5	117	119,5	117	



Drive cam operating parameters

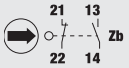
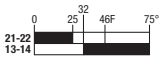
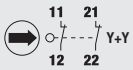
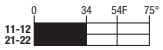


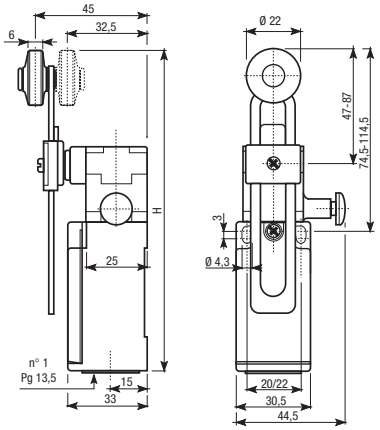
φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Drive forces	
Minimum command force	15 Ncm
Minimum forced opening force	35 Ncm

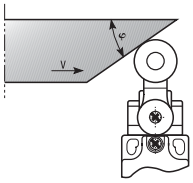
F

Thermoplastic roller variable length lever

Contact element		Cable entry				Contact travel
		PG 13,5		M20 x 1,5		
		Metal head Plastic body	Metal head Metal body	Metal head Plastic body	Metal head Metal body	
1NO+1NC slow action 	01	**E10001FBI**	**E10001FBM**	**E10101FBI**	**E10101FBM**	
2NC slow action 	04	**E10004FBI**	**E10004FBM**	**E10104FBI**	**E10104FBM**	
Weight	kg	0,22	0,305	0,22	0,305	
Pack	pcs	1	1	1	1	
H	mm	132 ÷ 172	129,5 ÷ 169,5	132 ÷ 172	129,5 ÷ 169,5	



Drive cam operating parameters

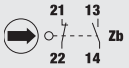
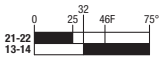
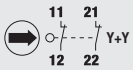
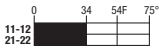


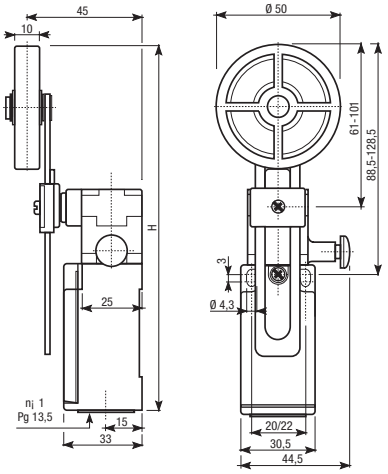
φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Drive forces	
Minimum command force	15 Ncm
Minimum forced opening force	35 Ncm

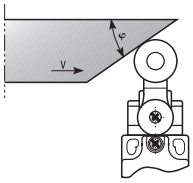
F•50

Ø50 mm rubber roller variable length lever

Contact element		Cable entry: PG 13,5 – Metal head Plastic body	Cable entry: PG 13,5 – Metal head Metal body	Cable entry: M20 x 1,5 – Metal head Plastic body	Cable entry: M20 x 1,5 – Metal head Metal body	Contact travel
1NO+1NC slow action 	**01**	**E10001FBI50**	**E10001FBM50**	**E10101FBI50**	**E10101FBM50**	
2NC slow action 	**04**	**E10004FBI50**	**E10004FBM50**	**E10104FBI50**	**E10104FBM50**	
Weight	**kg**	0,24	0,325	0,24	0,325	
Pack	**pcs**	1	1	1	1	
H	**mm**	146 ÷ 186	143,5 ÷ 183,5	146 ÷ 186	143,5 ÷ 183,5	



Drive cam operating parameters

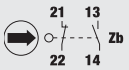
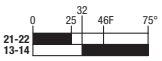
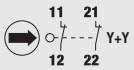
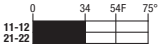


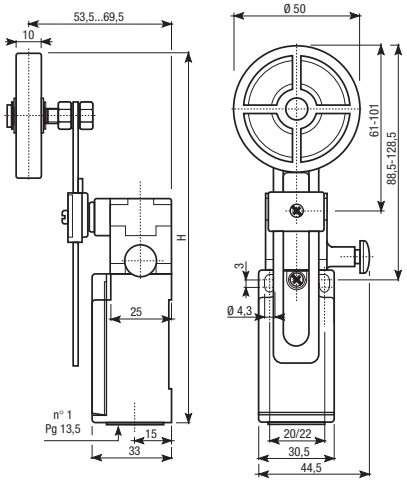
φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Drive forces	
Minimum command force	15 Ncm
Minimum forced opening force	35 Ncm

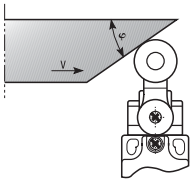
FBR•50

Ø50 mm rubber roller adjustable lever

Contact element		Cable entry				
		PG 13,5		M20 x 1,5		
		Metal head Plastic body	Metal head Metal body	Metal head Plastic body	Metal head Metal body	Contact travel
1NO+1NC slow action 	**01**	**E10001FBRI50**	**E10001FBRM50**	**E10101FBRI50**	**E10101FBRM50**	
2NC slow action 	**04**	**E10004FBRI50**	**E10004FBRM50**	**E10104FBRI50**	**E10104FBRM50**	
Weight	**kg**	0,24	0,33	0,24	0,33	
Pack	**pcs**	1	1	1	1	
H	**mm**	146 ÷ 186	143,5 ÷ 183,5	146 ÷ 186	143,5 ÷ 183,5	



Drive cam operating parameters



φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

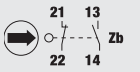
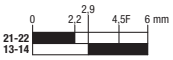
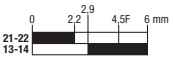
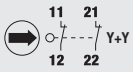
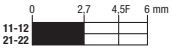
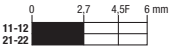
Drive forces	
Minimum command force	15 Ncm
Minimum forced opening force	35 Ncm

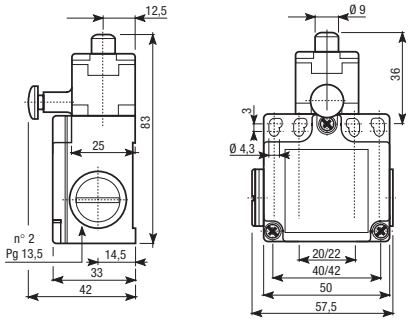
A

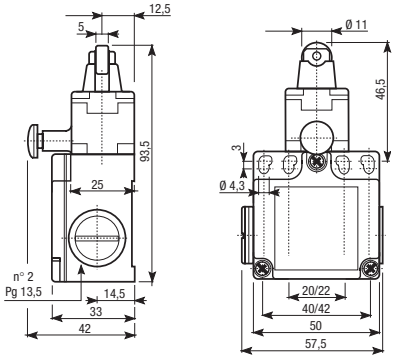
Steel plunger

B

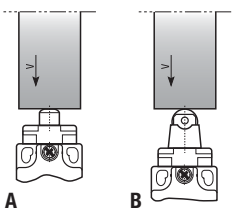
Steel roller plunger

Contact element		Cable entry PG 13,5 Metal head Plastic body	Cable entry M20 x 1,5 Metal head Plastic body	Contact travel	Cable entry PG 13,5 Metal head Plastic body	Cable entry M20 x 1,5 Metal head Plastic body	Contact travel
1NO+1NC scatto lento 	**01**	**E20001ABI**	**E20101ABI**		**E20001BBI**	**E20101BBI**	
2NC scatto lento 	**04**	**E20004ABI**	**E20104ABI**		**E20004BBI**	**E20104BBI**	
Weight	kg	0,18			0,185		
Pack	pcs	1			1		

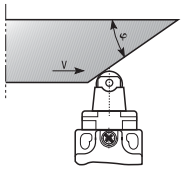




Drive cam operating parameters



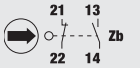
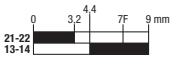
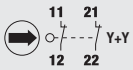
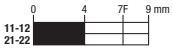
	V max (m/s)
Actuators A	0,5
Actuators B	0,5
Drive forces	
Minimum command force	9 N
Minimum forced opening force	28 N



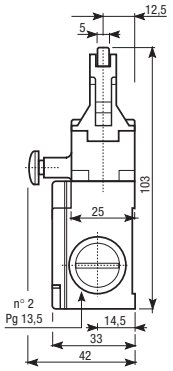
φ	V max (m/s)
20°	1
30°	0,5
Drive forces	
Minimum command force	9 N
Minimum forced opening force	28 N

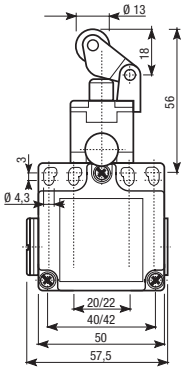
C

Thermoplastic roller lever, side actuation

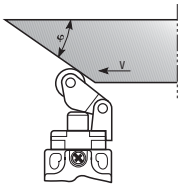
Contact element		Cable entry: PG 13,5 — Metal head, Plastic body	Cable entry: M20 x 1,5 — Metal head, Plastic body	Contact travel
1NO+1NC slow action 	**01**	**E20001CBI**	**E20101CBI**	
2NC slow action 	**04**	**E20004CBI**	**E20104CBI**	

Weight	kg	0,19
Pack	pcs	1





Drive cam operating parameters

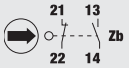
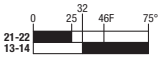
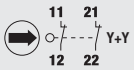
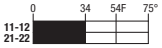


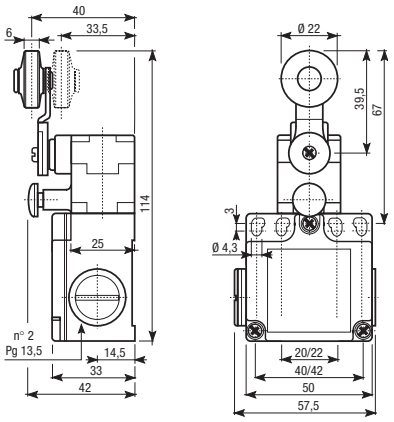
φ	V max (m/s)
20°	1
30°	0,5

Drive forces	
Minimum command force	9 N
Minimum forced opening force	26 N

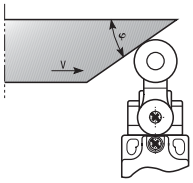
E

Thermoplastic roller lever

Contact element		Cable entry: PG 13,5 Metal head Plastic body	Cable entry: M20 x 1,5 Metal head Plastic body	Contact travel
1NO+1NC slow action 	**01**	**E20001EBI**	**E20101EBI**	
2NC slow action 	**04**	**E20004EBI**	**E20104EBI**	
Weight	kg	0,215		
Pack	pcs	1		



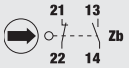
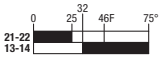
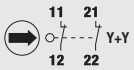
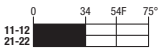
Drive cam operating parameters

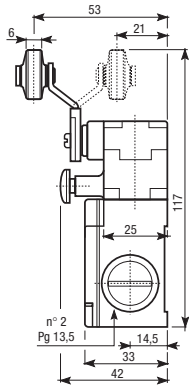


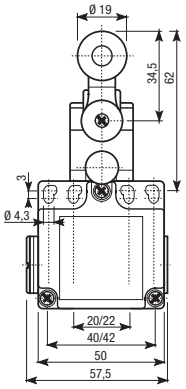
φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Drive forces	
Minimum command force	15 Ncm
Minimum forced opening force	35 Ncm

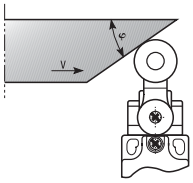
Thermoplastic roller lever

Contact element		Cable entry: PG 13,5 – Metal head Plastic body	Cable entry: M20 x 1,5 – Metal head Plastic body	Contact travel
1NO+1NC slow action 	**01**	**E20001IBI**	**E20101IBI**	
2NC slow action 	**04**	**E20004IBI**	**E20104IBI**	
Weight	**kg**	0,215		
Pack	**pcs**	1		





Drive cam operating parameters



φ	V max (m/s)
30°	1,5
45°	1
60°	0,75
60-90°	0,25

Drive forces	
Minimum command force	15 Ncm
Minimum forced opening force	35 Ncm

Key actuation safety switches

5 ways key actuation safety switches

The **5 way key** actuated safety switches are used on gates, sliding doors and other devices to protect the access to dangerous parts of machines. The key is applied to the moving protection barrier so it has to be removed from the switch on every opening thus operating a positive opening of the NC contact.
This kind of actuator is available on the **E100-E200** series with thermoplastic or metal body and thermoplastic head, with **IP66** protection degree.

Safety for the operator

The command circuit authorizing the start-up of the process is closed only by the complete insertion of the safety key, and the circuit is opened when this is removed. This prevents intentional tampering with the machine by the operator until the safety protection device is opened.

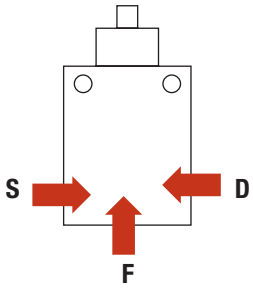
Resistance to vibrations

The device has been designed to permit limited key vibrations in case of mechanical disturbances.

In conformity with standards:
IEC EN 60947-5-1 • EN 60947-1 • UNI EN 1088
EN ISO 12100-1 • EN ISO 12100-2 • IEC 529
EN 60529 • VDE 0660-200 • VDE 0113 • UNI EN 13850

Applications:

Machines with safety barriers



Cable entry

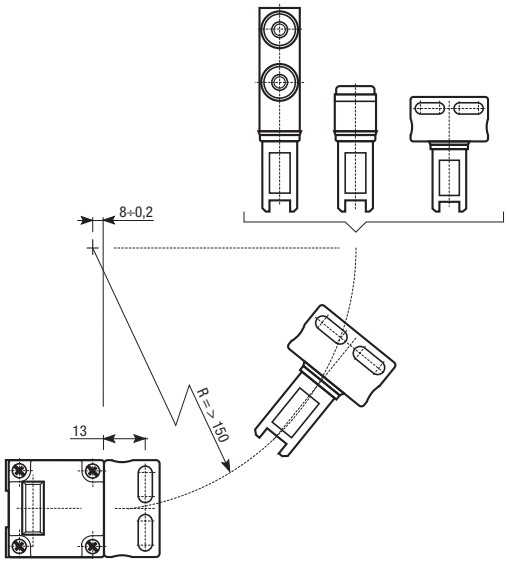
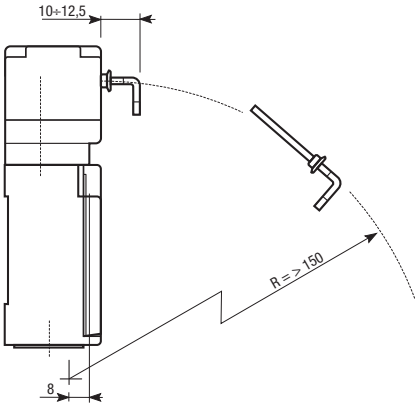
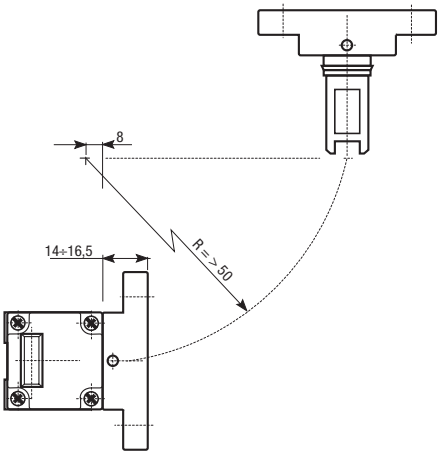
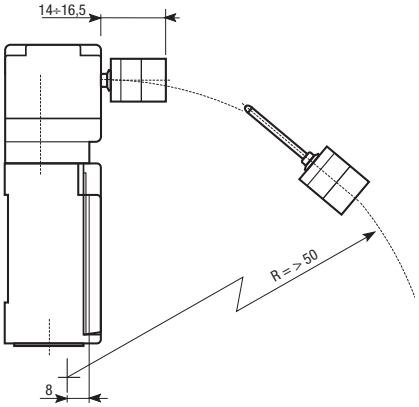
	F	S	D
E100	•		
E200		•	•
E300	•	•	•
E400	•		

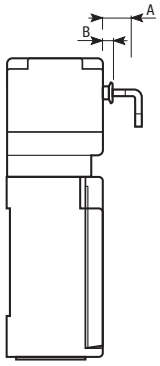
Fixing

E100	20/22 mm
E200	20/22 and 40/42 mm

Thread	Series part no.	
Pg 13,5	E100	E200
M20x1,5	E101	E201
1/2" NPT (on request)	E102	E202
Pg 11 (on request)	E103	
M16x1,5 (on request)	E104	
M12 connector (on request)	E100/M12	E200/M12

Instructions for correct installation
Assembly of the driver on a rotating protective device (allow space for the pivot radius).

Key type	Horizontal mouting	Vertical mounting
Z5 **Z5-1** **Z5-3** **Z5-4**		
Z52		



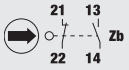
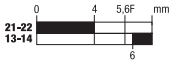
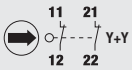
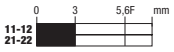
Recommended position for correct operation:

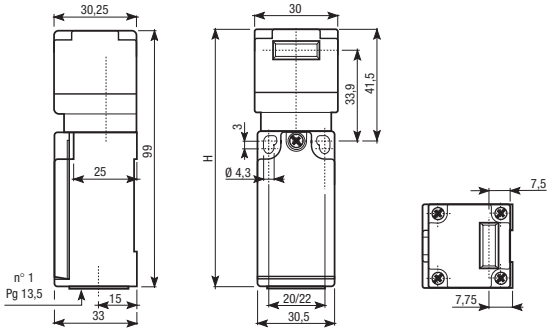
A (contact switching point) = 4 mm
B (actuator limit switch point) = 0 ÷ 1 mm max

The contacts remain closed from point A to point B (4 mm max travel)

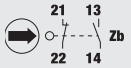
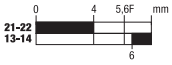
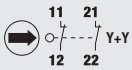
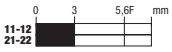
Never use the safety switch as a mechanical travel stop

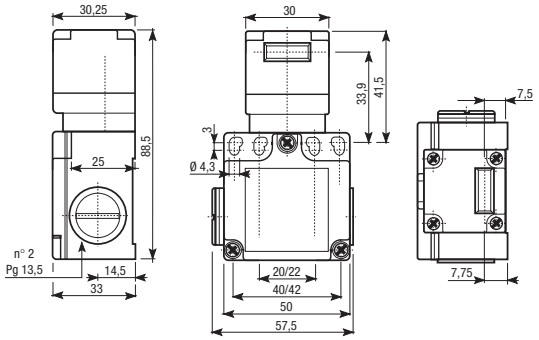
E100 5 way key

Contact element		Cable entry: PG 13,5 — Plastic head Plastic body	Cable entry: M20 x 1,5 — Plastic head Plastic body	Contact travel
1NO+1NC slow action 	**01**	**E10001S5I**	**E10101S5I**	
2NC slow action 	**04**	**E10004S5I**	**E10104S5I**	
Weight	kg	0,115	0,115	
Pack	pcs	1	1	
H	mm	99	99	



E200 5 way key

Contact element		Cable entry: PG 13,5 — Plastic head Plastic body	Cable entry: M20 x 1,5 — Plastic head Plastic body	Contact travel
1NO+1NC slow action 	**01**	**E20001S5I**	**E20101S5I**	
2NC slow action 	**04**	**E20004S5I**	**E20104S5I**	
Weight	kg	0,14	0,14	
Pack	pcs	1	1	

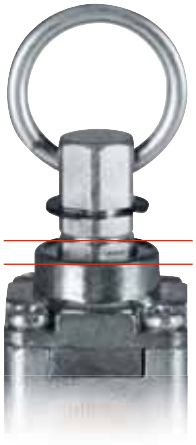


Pull wire safety switches

Pull wire safety switches

Pull wire safety switches are essential for the continuous control of a long line of machines or parts extending over a considerable length. They guarantee the safety of the operator, who is able to control the immediate stop of the machinery from any point in the operating zone when no or few automatic systems to cut off the power supply are present. This kind of actuator is available on the series **E100-E200-E400** with thermoplastic or metal body and metal head, with **IP66** protection degree.

Wire tension indicator
For the exact cable tension, check that the notch on the drive shaft is in line with the head.

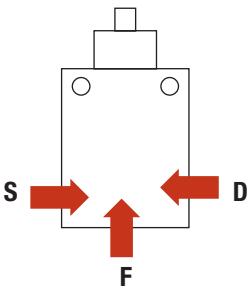


Reset button
Block reset that guarantees the locking of the NC head in the open position after a single operation.

In conformity with standards:
IEC EN 60947-5-1 • EN 60947-1 • UNI EN 1088
EN ISO 12100-1 • EN ISO 12100-2 • IEC 529
EN 60529 • VDE 0660-200 • VDE 0113 • UNI EN 13850

Applications:

Long lines of machines: conveyor belts, textile machines, printing machines, etc…



Fixing

E100	20/22 mm
E200	20/22 and 40/42 mm
E300	40 mm
E400	30 mm

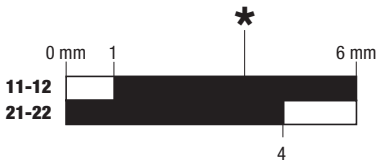
Cable entry

	F	S	D
E100	•		
E200		•	•
E300	•	•	•
E400	•		

Thread	Series part no.			
Pg 13,5	E100	E200	E300	E400…
M20x1,5	E101	E201	E301	E401…
1/2" NPT (on request)	E102	E202	E302	E402…
Pg 11 (on request)	E103			
M16x1,5 (on request)	E104			
M12 connector (on request)	E100/M12	E200/M12	E300/M12	E400/M12

Dedicated contact block

Dedicated contact block 08 with longer travel for pull-wire switches: cable vibrations will have no influence on the correct operation of the limit switch.



closed contacts
opened contacts

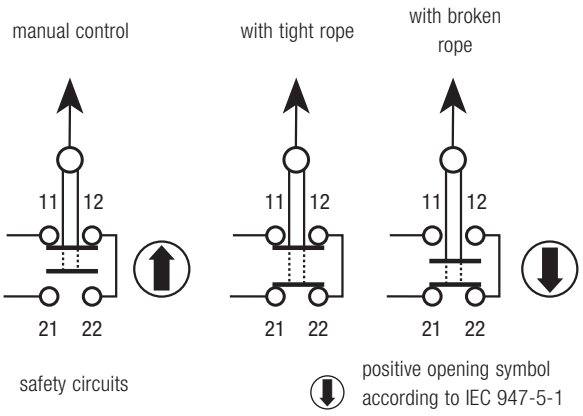
*tight rope
Tension force: 50N / final 60 N

* Installation travel: any cable vibrations will have no influence on the correct operation of the limit switch.

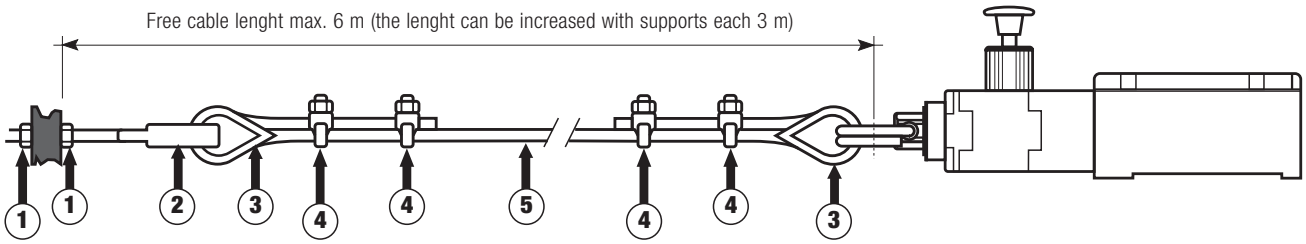
Indications for correct operation

The switch has to be fitted in such a way that the cable is sufficiently taut and closes both contacts.
For the exact cable tension, check that the notch on the drive shaft is in line with the head.

Contacts position during operation for contact block 08



NOTE: the contacts 11-12 and 21-22 have to be connected in series



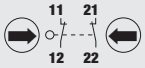
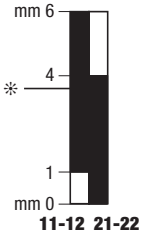
Examples of connection

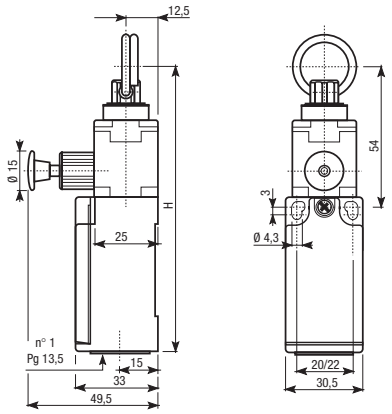
Free cable lenght max. 6 m (increase the lenght with supports each 3 m).

Notes

1. BM 10 DIN 439 hexagonal nut
2. part no. 005 - BM 10 DIN 439 ring with thread
3. part no. R05 - B - 5 mm DIN 6899 noose
4. part no. M05 - 5 mm DIN 1480 clamp
5. part no. F05 - PVC steel cable, Ø 5 mm

E100

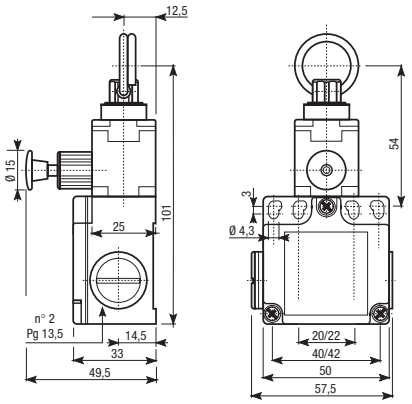
Contact element		Cable entry				Contact travel
		PG 13,5		M20 x 1,5		
		Metal head Plastic body	Metal head Metal body	Metal head Plastic body	Metal head Metal body	
2NC slow action 	08	**E10008TBI**	**E10008TBM**	**E10108TBI**	**E10108TBM**	
Weight	kg	0,195	0,29	0,195	0,29	
Pack	pcs	1	1	1	1	
H	mm	111,5	109	111,5	109	

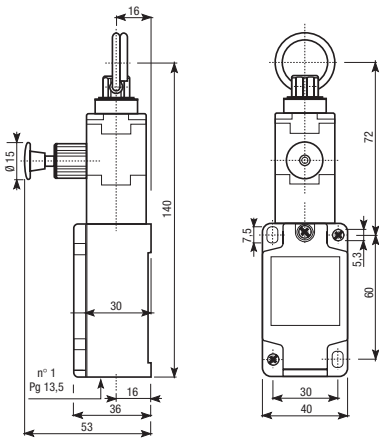


E200

E400

Contact element		Cable entry						Contact travel
		PG 13,5	M20 x 1,5	PG 13,5		M20 x 1,5		
		Metal head Plastic body	Metal head Plastic body	Metal head Plastic body	Metal head Metal body	Metal head Plastic body	Metal head Metal body	
2NC slow action 11 21 12 22	08	**E20008TBI**	**E20108TBI**	**E40008TBI**	**E40008TBM**	**E40108TBI**	**E40108TBM**	mm 6 4 1 mm 0 **11-12 21-22**
Weight	kg	0,22		0,24	0,465	0,24	0,465	
Pack	pcs	1		1		1		





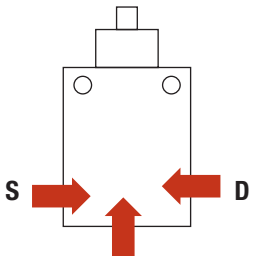
Hinges operating safety switches

Hinges operating safety switches

Safety switches for hinges are devices used to guarantee operator safety, applied to machines fitted with protection barriers. Metal shaft switches are ideal for the control of doors and gates, with application directly to the hinge. This kind of actuator is available on the series **E100** with thermoplastic or metal body and metal head, with **IP66** protection degree.

Reduced angle of operation
they guarantee stopping of dangerous movement when **the lever reaches an angle of 4° 30'.**

In conformity with standards:
IEC EN 60947-5-1 • EN 60947-1 • UNI EN 1088
EN ISO 12100-1 • EN ISO 12100-2 • IEC 529 • EN 60529
VDE 0660-200 • VDE 0113 • UNI EN 13850



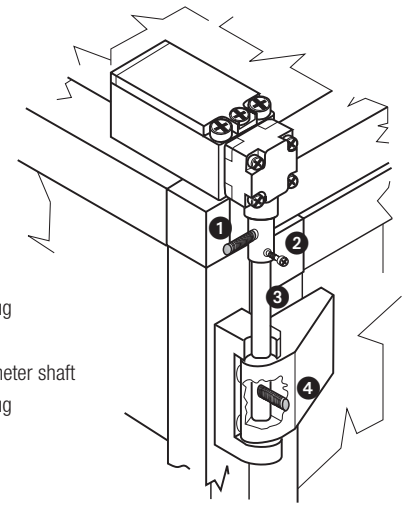
Cable entry

	F	S	D
E100	•		

Fixing

E100	20/22 mm

Thread	Series part no.
Pg 13,5	E100
M20x1,5	E101
1/2" NPT (on request)	E102
Pg 11 (on request)	E103
M16x1,5 (on request)	E104
M12 connector (on request)	E100/M12



❶ Locking plug
❷ M4 screw
❸ 8 mm diameter shaft
❹ Locking plug

Notes for installation

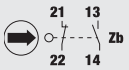
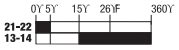
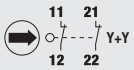
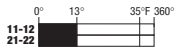
Instructions for correct installation:

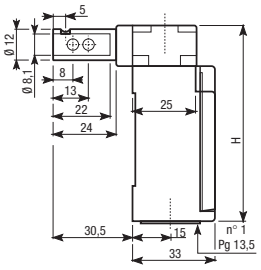
- Fix the switch in place to the door frame with two screws Connect the safety circuit to the NC contact (21-22, 01/11-12, 04)
- Insert an 8 mm diameter shaft ❸ protruding from the door hinge, in the shaft of the switch and fix it in place temporarily with the M4 screw ❷
- Adjust the opening point of the NC contact by rotating the shaft to reduce the standard opening angle (5°)
- Drill the pin ❸ through one of the two holes in the shaft and fix it in place with the locking plug ❶

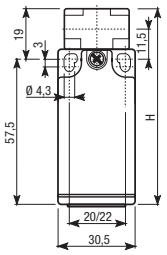
Applications:

Machines with safety barriers

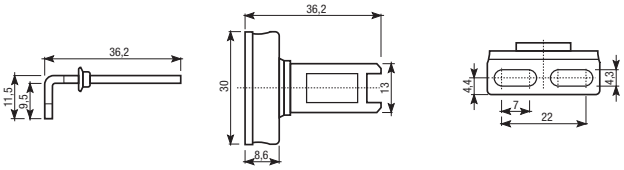
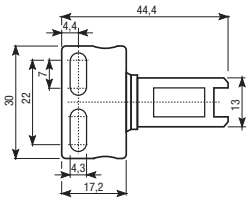
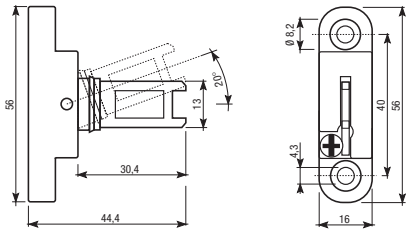
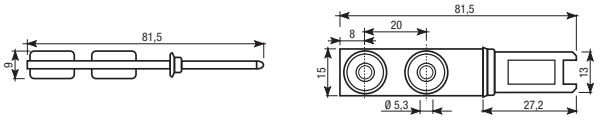
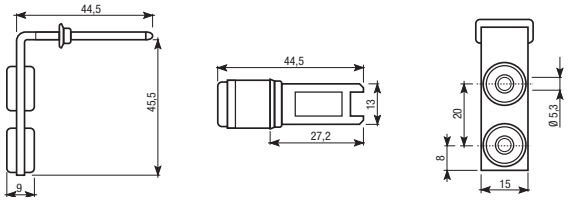
E100

Contact element		Cable entry				Contact travel
		PG 13,5		M20 x 1,5		
		Metal head Plastic body	Metal head Metal body	Metal head Plastic body	Metal head Metal body	
1NO+1NC slow action 	**01**	**E10001SCI**	**E10001SCM**	**E10101SCI**	**E10101SCM**	
2NC slow action 	**04**	**E10004SCI**	**E10004SCM**	**E10104SCI**	**E10104SCM**	
Weight	**kg**	0,125	0,215	0,125	0,215	
Pack	**pcs**	1	1	1	1	
H	**mm**	76,5	74	76,5	74	





Accessories

	Part no.	Description	Pack	Weight conf. (kg)	Dimensions
	**Z5**	Angle key mounting perpendicular to operating direction (key provided with the switch)	5	0,128	
	**Z51**	Straight key	5	0,128	
	**Z52**	Adjustable key	5	0,153	
	**Z53**	Straight key	5	0,128	
	**Z54**	Angle key mounting perpendicular to operating direction	5	0,128	
	**M05**	Clamp for Ø 5mm cable	5	0,140	
	**R05**	Wire rope thimble, shape A, for rope Ø5 mm - DIN 6899	5	0,050	
	**T05**	Wrought iron tension screw M6 x 60	5	0,320	
	**005**	M8 eyelet with thread	5	0,155	
	**F05**	Ø 5mm Red safety cable	1	21,025	
	**ELEM01**	Slow action 1NO+1NC	5	0,485	
	ELEM04	Slow action 2NC	5	0,485	
	ELEM08	Slow action 2NC	5	0,485	