

Safety Switches with Separate Actuator, Metal Housing **EUCHNER**

Selection table for safety switches NZ.VZ

Version																
SB	Protective plate, tamper protection on the switch head															
Connection																
M									Thread M20x1.5 for cable glands							
SVM5									M12 plug connector 5-pin							
C16-1									Plug connector 6-pin + PE							
SR6									Plug connector 6-pin + PE							
MR8									Plug connector 7-pin + PE							
MR9									Plug connector 8-pin + PE							
MR10									Plug connector 9-pin + PE							
SR11									Plug connector 11-pin + PE							
Switching element																
Two contacts										1 NC ⊖ + 1 NO or 2 NC ⊖						
Four contacts										2 NC ⊖ + 2 NO, 3 NC ⊖ + 1 NO or 4 NC ⊖						
																
SB	M	SVM5	C16-1	SR6	Connection				MR8	MR9	MR10	SR11	Two contacts	Four contacts	With version	Page
	●												●	●	ATEX	48
		●		●									●			49
						●	●	●				●		●		49
●	●												●		C1233	51
●			●	●									●		C1420/C1701/C1233	52
●											●			●	C1233	52

Safety Switches with Separate Actuator, Metal Housing **EUCHNER**

Safety switch NZ.VZ

- ▶ Housing according to EN 50041
- ▶ Various cable entries
- ▶ Plug connector optional
- ▶ LED optional



Approach direction

- Horizontal
- Can be adjusted in 90° steps.

LED function display (optional)

A function display is available for the following voltage ranges:

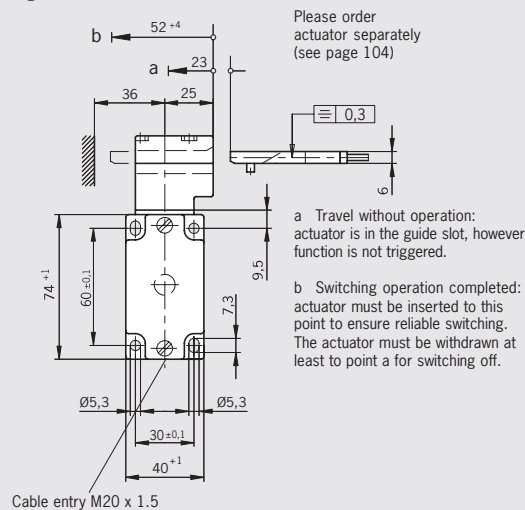
- ▶ AC/DC 12-60 V red
- ▶ AC 110 V ±15% red
- ▶ AC 230 V ±15% red

Switching elements (see also Page 13/14)

- ▶ **511** Snap-action switching element
1 NC + 1 NO
- ▶ **528H** Slow-action switching element
1 NC + 1 NO
- ▶ **538H** Slow-action switching element
2 NC
- ▶ **2121H** Slow-action switching element
4 NC
- ▶ **2131H** Slow-action switching element
3 NC + 1 NO
- ▶ **3131H** Slow-action switching element
2 NC + 2 NO

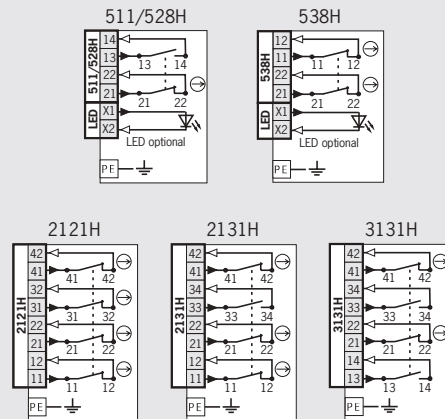
Cable entry M20 x 1.5

Dimension drawings



For cable glands see page 115

Wiring diagrams Actuator inserted



Ordering table

Series	Actuator	Connection	Switching element	Version	Function display			
					Without LED	12-60 V red LED	110 V red LED	230 V red LED
NZ	VZ Separate actuator	1 Cable entry M20 x 1.5	511 ¹⁾		089 479 ¹⁾	On request	On request	On request
			1 NC + 1 NO		NZ1VZ-511E-M			
			528H		090 671	090 566 ³⁾	089 480 ³⁾	082 121 ³⁾
			1 NC + 1 NO		NZ1VZ-528E-M	NZ1VZ-528EL060-M	NZ1VZ-528EL110-M	NZ1VZ-528EL220-M
			538H		085 676	082 119 ³⁾	089 481 ³⁾	089 482 ³⁾
			2 NC		NZ1VZ-538E-M	NZ1VZ-538EL060-M	NZ1VZ-538EL110-M	NZ1VZ-538EL220-M
			2121H		089 486	-	-	-
			4 NC		NZ1VZ-2121E-M			
			2131H		082 123	-	-	-
			3 NC + 1 NO		NZ1VZ-2131E-M			
			2131H	ATEX incl. cable gland	093 660 ²⁾	-	-	-
			3 NC + 1 NO		NZ1VZ-2131E-MEX			
			3131H		082 122	-	-	-
			2 NC + 2 NO		NZ1VZ-3131E-M			

1) No BG approval for switching element 511

2) II 3 G EEx nC IIC T5 X (reduced resistance to impact acc. to EN 61241-1; max. 4 J) / II 3 D Ex tD A22 T90°C X (reduced resistance to impact acc. to EN 61241-1; max. 4 J)

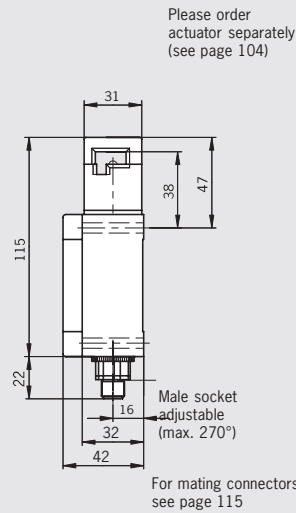
3) Approval pending

Safety Switches with Separate Actuator, Metal Housing **EUCHNER**

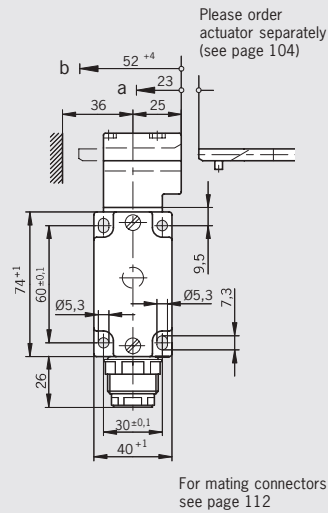


Plug connector SVM5 M12 plug, 5-pin

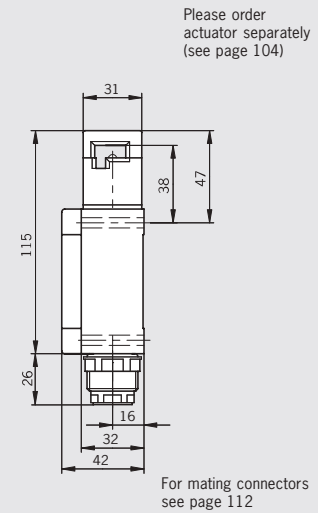
Dimension drawings



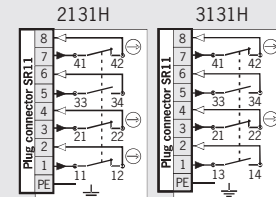
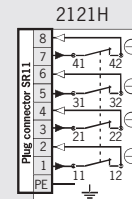
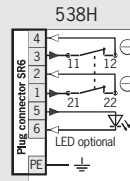
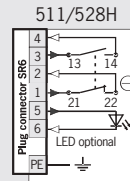
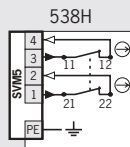
Plug connector SR6 6-pin + PE



Plug connector SR11 11-pin + PE



Wiring diagrams Actuator inserted



Ordering table

Series	Actuator	Connection	Switching element	Function display			
				Without LED	12-60 V red LED	110 V red LED	230 V red LED
NZ	VZ Separate actuator	2 Plug connector SVM5	538H 2 NC	084 905 NZ2VZ-538ESVM5	On request	-	-
		2 Plug connector SR6	511 1 NC + 1 NO	On request	045 551 NZ2VZ-511EL060	On request	On request
			528H 1 NC + 1 NO	084 885 NZ2VZ-528E	045 801 NZ2VZ-528EL060	059 467 NZ2VZ-528EL110	038 129 NZ2VZ-528EL220
			538H 2 NC	090 143 NZ2VZ-538E	052 108 NZ2VZ-538EL060	072 234 NZ2VZ-538EL110	059 004 NZ2VZ-538EL220
		2 Plug connector SR11	2121H 4 NC	088 852 NZ2VZ-2121E	-	-	-
			2131H 3 NC + 1 NO	090 144 NZ2VZ-2131E	-	-	-
			3131H 2 NC + 2 NO	090 145 NZ2VZ-3131E	-	-	-

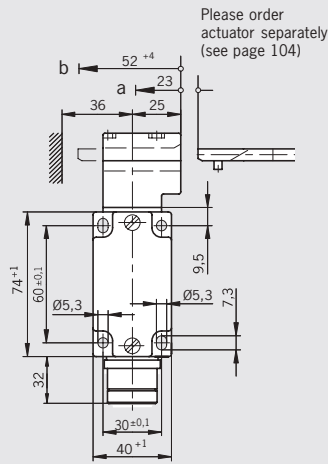
3) Approval pending

Safety Switches with Separate Actuator, Metal Housing **EUCHNER**



Plug connector MR8 7-pin + PE

Dimension drawings

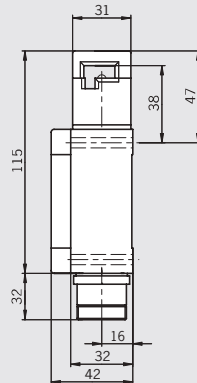


For mating connectors
see page 124



Plug connector MR9 8-pin + PE

Please order
actuator separately
(see page 104)

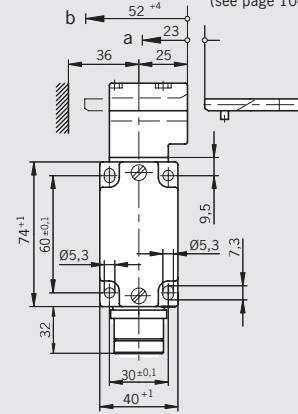


For mating connectors
see page 124



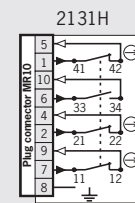
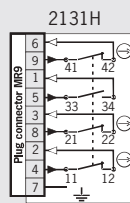
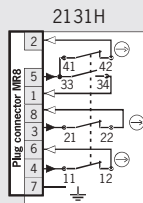
Plug connector MR10 9-pin + PE

Please order
actuator separately
(see page 104)



For mating connectors
see page 124

Wiring diagrams Actuator inserted



Ordering table

Series	Actuator	Connection	Switching element	Function display			
				Without LED	12-60 V red LED	110 V red LED	230 V red LED
NZ	VZ Separate actuator	1 Plug connector MR8	2131H 3 NC $\ominus$ + 1 NO	092 355 NZ1VZ-2131E-8C-GMMF	-	-	-
		1 Plug connector MR9	2131H 3 NC $\ominus$ + 1 NO	077 363 NZ1VZ-2131E-9C-GMMF	-	-	-
		1 Plug connector MR10	2131H 3 NC $\ominus$ + 1 NO	095 897 NZ1VZ-2131E-10C-FW	-	-	-

3) Approval pending

Safety Switches with Separate Actuator, Metal Housing EUCHNER

Safety switch NZ.VZ

- ▶ Housing according to EN 50041
- ▶ Protective plate for switch head
- ▶ Plug connector optional
- ▶ LED optional



Approach direction

- Horizontal
- Can be adjusted in 90° steps.

Protective plate for switch head

Makes it more difficult to tamper with the switch.

LED function display (optional)

A function display is available for the following voltage ranges:

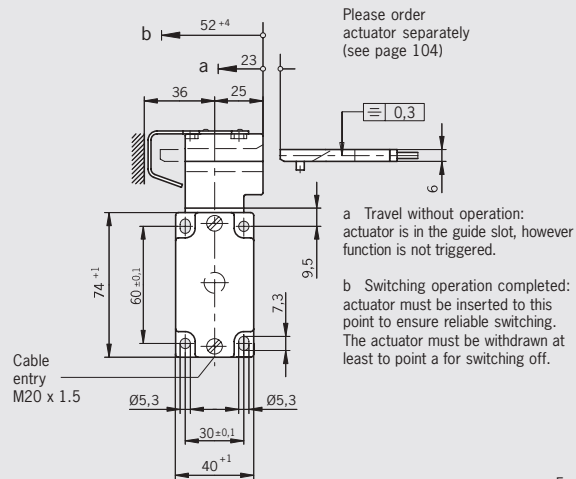
- ▶ AC/DC 12-60 V red
- ▶ AC 230 V $\pm 15\%$ red

Switching elements (see also Page 13/14)

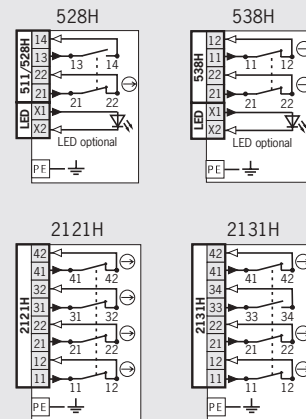
- ▶ **528H** Slow-action switching element
1 NC $\ominus$ + 1 NO
- ▶ **538H** Slow-action switching element
2 NC $\ominus$
- ▶ **2121H** Slow-action switching element
4 NC $\ominus$
- ▶ **2131H** Slow-action switching element
3 NC $\ominus$ + 1 NO

Cable entry M20 x 1.5

Dimension drawings



Wiring diagrams Actuator inserted



Ordering table

Series	Actuator	Connection	Switching element	Version	Function display		
					Without LED	12-60 V red LED	230 V red LED
NZ	VZ Separate actuator	1 Cable entry M20 x 1.5	528H 1 NC $\ominus$ + 1 NO	With protective plate	082 137 ³⁾ NZ1VZ-528E-MC1233	089 497 ³⁾ NZ1VZ-528EL060-MC1233	On request
			538H 2 NC $\ominus$	With protective plate	093 858 ³⁾ NZ1VZ-538E-MC1233	On request	089 496 ³⁾ NZ1VZ-538EL220-MC1233
			2121H 4 NC $\ominus$	With protective plate	089 914 ³⁾ NZ1VZ-2121E-MC1233	-	-
			2131H 3 NC $\ominus$ + 1 NO	With protective plate	093 859 ³⁾ NZ1VZ-2131E-MC1233	-	-

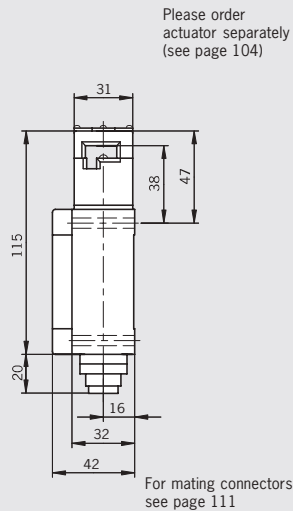
3) Approval pending

Safety Switches with Separate Actuator, Metal Housing **EUCHNER**

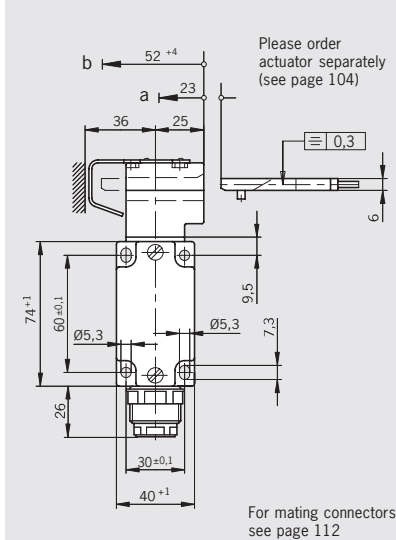


Plug connector C16-1
6-pin + PE

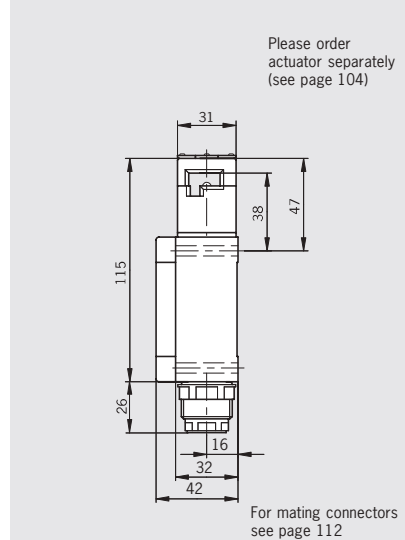
Dimension drawings



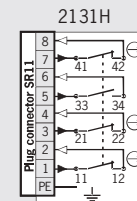
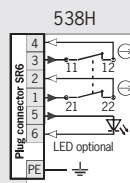
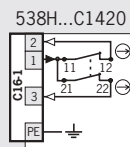
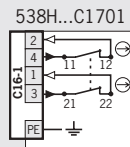
Plug connector SR6
6-pin + PE



Plug connector SR11
11-pin + PE



Wiring diagrams Actuator inserted



Ordering table

Series	Actuator	Connection	Switching element	Version	Function display
NZ	VZ Separate actuator	2 Plug connector C16-1 ⁴⁾	538H 2 NC $\ominus$	C1701 With protective plate	071 200 NZ2VZ-538EC1701
				C1420 With protective plate Alternative wiring	043 296 NZ2VZ-538EC1420
		2 Plug connectors SR6	538H 2 NC $\ominus$	With protective plate	077 229 NZ2VZ-538EC1233
		2 Plug connectors SR11	2131H 3 NC $\ominus$ + 1 NO	With protective plate	093 857 NZ2VZ-2131EC1233

³⁾ Approval pending

⁴⁾ Switch can be replaced by an enabling switch with C16-1 plug connector

Safety switch NZ.VZ



The technical data on switches and switching elements apply to all connections. Further technical data are given for the connection selected.

Switch 		Value	Unit
Parameter			
Housing material		Anodized die-cast alloy	
Mechanical life		2 x 10 ⁶ operating cycles	
Ambient temperature		- 25 ... + 80	°C
Weight		Approx. 0.3	kg
Max. approach speed		20	m/min
Approach speed, min.		0.02 (for switching element ES511)	m/min
Actuating force		35	N
Extraction force		35	N
Retention force		8	N

Switching element  		Value	Unit
Parameter			
Switching principle	Snap-action switching element	Slow-action switching element	
Switching elements with 2 switching elements	511 1 NC + 1 NO	528H 1 NC + 1 NO	538H 2 NC
Switching elements with 4 switching elements	-	2121H 4 NC	2131H 3 NC + 1 NO 3131H 2 NC + 2 NO
Min. switching current at 24 V DC	10	1	mA
Switching current max.	6	4	A
Contact closing time	< 4	-	ms
Contact bounce time	< 3	-	ms
Rated impulse withstand voltage U _{imp}		2.5	kV
Contact material		Silver alloy, gold flashed	

Connection, cable entry M20 x 1.5 		Value	Unit
Parameter			
Connection		Screw terminal	
Version		M20 x 1.5	
Conductor cross-section max.		Per wire 1.5 mm²	
Degree of protection according to IEC 60529		IP 67	
Rated insulation voltage U _i		250	V AC/DC
Switching element	Snap-action switching element	Slow-action switching element	
	511	528H, 538H, 2121H, 2131H, 3131H	
Conventional thermal current I _{th}	6	4	A
Short circuit protection according to IEC 60269-1 (control circuit fuse)	6	4	A gG
Utilization category to IEC 60947-5-1	AC-12	I _e 10 A U _e 230 V	
	AC-15	I _e 6 A U _e 230 V	
	DC-13	I _e 6 A U _e 24 V	
		I _e 4 A U _e 230 V	
		I _e 4 A U _e 24 V	

Connection, plug connector SVM 5 (M12) 		Value	Unit
Parameter			
Connection		Plug connector	
Version		M12 (4-pin + PE), male socket adjustable (max. 270°) for elbow connector	
Degree of protection according to IEC 60529		IP 67 ¹⁾	
Rated insulation voltage U _i		30	V AC/DC
Switching element		Slow-action switching element	
		538H	
Conventional thermal current I _{th}		4	A
Short circuit protection according to IEC 60269-1 (control circuit fuse)		4	A gG
Utilization category to IEC 60947-5-1	AC-15	I _e 4 A U _e 30 V	
	DC-13	I _e 4 A U _e 24 V	

1) Screwed tight with the related plug connector (see page 115)

Connection, plug connector C16-1



Parameter		Value	Unit
Connection		Plug connector	
Version		C16-1 (6-pin + PE)	
Degree of protection according to IEC 60529		IP 67 ¹⁾	
Rated insulation voltage U _i		250	V AC/DC
Switching element		Slow-action switching element 538H	
Conventional thermal current I _{th}		4	A
Short circuit protection according to IEC 60269-1 (control circuit fuse)		4	A gG
Utilization category to IEC 60947-5-1	AC15	I _e 4 A U _e 230 V	
	DC13	I _e 4 A U _e 24 V	

Connection, plug connector SR6



Parameter		Value	Unit
Connection		Plug connector according to DIN 43651	
Version		SR6 (6-pin + PE)	
Degree of protection according to IEC 60529		IP 65 ¹⁾	
Rated insulation voltage U _i		250	V AC/DC
Switching element		Snap-action switching element 511	Slow-action switching element 528H, 538H
Conventional thermal current I _{th}		6	A
Short circuit protection according to IEC 60269-1 (control circuit fuse)		6	A gG
Utilization category to IEC 60947-5-1	AC-15	I _e 6 A U _e 230 V	I _e 4 A U _e 230 V
	DC-13	I _e 6 A U _e 24 V	I _e 4 A U _e 24 V

Connection, plug connector MR8



Parameter		Value	Unit
Connection		Plug connector	
Version		MR8 (7-pin + PE)	
Degree of protection according to IEC 60529		IP 65 ¹⁾	
Rated insulation voltage U _i		250	V AC/DC
Switching element		Slow-action switching element 2131H	
Conventional thermal current I _{th}		4	A
Short circuit protection according to IEC 60269-1 (control circuit fuse)		4	A gG
Utilization category to IEC 60947-5-1	AC15	I _e 4 A U _e 230 V	
	DC13	I _e 4 A U _e 24 V	

Connection, plug connector MR9



Parameter		Value	Unit
Connection		Plug connector	
Version		MR9 (8-pin + PE)	
Degree of protection according to IEC 60529		IP 65 ¹⁾	
Rated insulation voltage U _i		250	V AC/DC
Switching element		Slow-action switching element 2131H	
Conventional thermal current I _{th}		4	A
Short circuit protection according to IEC 60269-1 (control circuit fuse)		4	A gG
Utilization category to IEC 60947-5-1	AC15	I _e 4 A U _e 230 V	
	DC13	I _e 4 A U _e 24 V	

Connection, plug connector SR11



Parameter		Value	Unit
Connection		Plug connector	
Version		SR11 (11-pin + PE)	
Degree of protection according to IEC 60529		IP 65 ¹⁾	
Rated insulation voltage U _i		50	V AC/DC
Switching element		Slow-action switching element 2121H, 2131H, 3131H	
Conventional thermal current I _{th}		4	A
Short circuit protection according to IEC 60269-1 (control circuit fuse)		4	A gG
Utilization category to IEC 60947-5-1	AC15	I _e 4 A U _e 50 V	
	DC13	I _e 4 A U _e 24 V	

1) Screwed tight with the related plug connector (see page 112)