

# Product Overview

## Safety Engineering electro-mechanical



# EUCHNER

More than safety.

# Safety Engineering at a Glance

## Enabling Switches



Enabling switches  
ZSE/ZXE



Enabling switches  
ZSA/ZSB












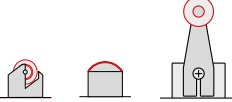


Enabling switches  
ZSM

	Enabling switches ZSE/ZXE	Enabling switches ZSA/ZSB	Enabling switches ZSM
Approvals			
Features/specific advantages	<ul style="list-style-type: none"> <li>• three-stage built-in version</li> <li>• single or dual-channel</li> </ul>	<ul style="list-style-type: none"> <li>• three-stage</li> <li>• single or dual-channel</li> <li>• kit available</li> </ul>	<ul style="list-style-type: none"> <li>• three-stage</li> <li>• dual or three-channel</li> <li>• modular design, vibration signal</li> <li>• kit available</li> </ul>
AS-Interface <i>Safety at Work</i>	–	●	–
<b>Switching elements</b>			
Total switching contacts	see product catalog	see product catalog	see product catalog
Conventional thermal current	4 A	4 A	–
Switching current, min. (at 24V)	1 mA (ZSE)/5 mA (ZXE)	1 mA	–
Mechanical life, max.	1 x 10 <sup>5</sup> (ZSE)/1 x 10 <sup>5</sup> (ZXE)	1 x 10 <sup>5</sup>	1 x 10 <sup>6</sup>
<b>Environment</b>			
Housing material	Plastic	Plastic	Plastic
Housing dimensions, min. (HxWxD)	see product catalog	see product catalog	see product catalog
Ambient temperature	-5 to +60 °C	-5 to +50 °C	-5 to +60 °C
Degree of protection, max. acc. to IEC 60529	IP65 (integrated)	IP65/IP67	IP54
LED display	–	●	●
Approach/actuating directions	–	–	–
Approach speed, max.	–	–	–
<b>Guard locking</b>			
Solenoid operating voltage	–	–	–
Power consumption	–	–	–
Locking force, max.	–	–	–
<b>Connection</b>			
Cable entry	–	∅ 4 – 8 mm	∅ 5 – 10 mm
Connection cable (pre-assembled)	–	●	●
Plug connector	–	●	●
<b>Accessories</b>			
Holder	–	●	●
Connection box/etc.	–	●	●
Kit	–	●	●

1) ZSE and ZXE

# Safety Engineering at a Glance

	Safety Switches with Safety Function		
	 <p>Single limit switches NB01</p>	 <p>Single limit switches N1A</p>	 <p>Safety hinges ESH-ARO/ESH-PRO</p>
	 <p>Position switches NZ</p>		 <p>Safety switches NZ.VZ</p>
Approvals			
Features/specific advantages	<ul style="list-style-type: none"> <li>• according to EN 50041</li> <li>• according to DIN 43693</li> </ul>	<ul style="list-style-type: none"> <li>• robust version</li> <li>• two positively driven contacts</li> </ul>	<ul style="list-style-type: none"> <li>• basic housing according to EN 50041</li> </ul>
ASInterface Safety at Work 	●	–	●
<b>Switching elements</b>			
Total switching contacts	1– 4	2	4
Conventional thermal current	4 A – 6 A	3 A	4 A
Switching current, min. (at 24V)	1 mA (NZ, NB01)/ 5 mA (N1A)	1 mA	1 mA
Mechanical life, max.	10x10 <sup>6</sup> (NB01)/ 30x10 <sup>6</sup> (NZ, N1A <sup>2)</sup> )	1 x 10 <sup>6</sup>	2 x 10 <sup>6</sup>
<b>Environment</b>			
Housing material	die-cast alloy, anodized	die-cast zinc	die-cast alloy, anodized
Housing dimensions, min. (HxWxD)		123 x 40 x 42 mm	115 x 40 x 42 mm
Ambient temperature	-25 to +80 °C*	-25 to +70 °C	-25 to +80 °C
Degree of protection, max. acc. to IEC 60529	IP67	IP67	IP67
LED display	●	Window	●
Approach/actuating directions	depending on actuator 	–	
Approach speed, max.	50 m/min. – 300 m/min.	–	20 m/min.
<b>Guard locking</b>			
Solenoid operating voltage	–	–	–
Power consumption	–	–	–
Locking force, max.	–	–	–
<b>Connection</b>			
Cable entry	M20 x 1.5 <sup>1)</sup>	–	M20 x 1.5 <sup>1)</sup>
Connection cable (pre-assembled)	○	–	○
Plug connector	●	M12	●
<b>Accessories</b>			
Actuator straight/straight rubber-cushioned		–	●/–
Hinged actuator	Roller lever arm, chisel, roller and dome plungers, long roller plunger	–	●
Min. door radius (hinged actuator)		–	165 mm
Min. door radius (standard actuator)		–	1000 mm
Bolts for safety guards		–	●

● available


















● not available in all versions (see catalog)

○ available on request

– not available

**Metal Housing**

**Safety Switches with Separate Actuator**

















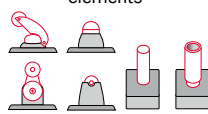
Without guard locking		With guard locking	With guard locking and guard lock monitoring			
						
Safety switches NX		Safety switches SGA	Safety switches NZ.VZ.VS	Safety switches TZ	Safety switches TX	Safety switches STA
						
<ul style="list-style-type: none"> <li>physically compatible with TX</li> </ul>		<ul style="list-style-type: none"> <li>physically compatible with GP und SGP</li> </ul>	<ul style="list-style-type: none"> <li>basic housing according to EN 50041</li> </ul>	<ul style="list-style-type: none"> <li>two switching systems in one housing</li> </ul>	<ul style="list-style-type: none"> <li>slim design</li> <li>auxiliary key, emergency or escape release</li> </ul>	<ul style="list-style-type: none"> <li>physically compatible with TP and STP</li> <li>also as Twin and BiState version</li> </ul>
●	–	–	●	●	●	
4	4	4	8	4	4	
4A	4A	4A	4A	4A	4A	
1 mA	1 mA	1 mA	1 mA	1 mA	1 mA	
2 x 10 <sup>6</sup>	2 x 10 <sup>6</sup>	2 x 10 <sup>6</sup>	1 x 10 <sup>6</sup>	1 x 10 <sup>6</sup>	1 x 10 <sup>6</sup>	
die-cast alloy, anodized	die-cast alloy	die-cast alloy, anodized	die-cast alloy, anodized	die-cast alloy, cathodically dipped	die-cast alloy	
115x40x42mm	123x40x42 mm	115x40x42mm	110x110x40mm	240x42x59mm	190x40x46.5 mm	
-25 to +80 °C	-20 to +80 °C	-25 to +80 °C	-25 to +80 °C	-20 to +80 °C	-20 to +80 °C	
IP67	IP67	IP67	IP67	IP67	IP67	
●	–	●	●	●	●	
						
20 m/min.	20 m/min.	20 m/min.	20 m/min.	20 m/min.	20 m/min.	
–	–	24 / 115 / 230V	24 / 115 / 230V	24 / 115 / 230V	24 / 110 / 230V	
–	–	10W	7W	8W	8W	
–	–	2000N	2000N	1700N	3000N	
M20x1.5 <sup>1)</sup>	3xM20x1.5	M20x1.5 <sup>1)</sup>	M20x1.5 <sup>1)</sup>	3xM20x1.5 <sup>1)</sup>	3xM20x1.5	
○	–	○	○	○	○	
●	●	●	●	●	●	
●/–	●/●	●/–	●/–	–/●	●/●	
●	●	●	●	●	●	
165 mm	200 mm	165 mm	165 mm	100 mm	200 mm	
1000 mm	300 mm	1000 mm	1000 mm	300 mm	300 mm	
●	●	●	●	●	●	

\* (Low and high temperature upon request)

1) further versions upon request

2) snap-action contact element 1 x 10<sup>6</sup>



















# Safety Engineering at a Glance

	Safety Switches with Safety Function					
	Without guard locking					
	 Safety switches NM	 Safety switches NM.VZ	 Safety switches NQ	 Safety switches NP	 Safety switches GP	
Approvals						
Features/specific advantages	<ul style="list-style-type: none"> <li>• small design</li> <li>• various lever/plunger forms and hinged actuators</li> </ul>	<ul style="list-style-type: none"> <li>• small design</li> <li>• small approach radii</li> </ul>	<ul style="list-style-type: none"> <li>• compact housing</li> </ul>	<ul style="list-style-type: none"> <li>• basic housing according to EN 50047</li> <li>• ideal for profile assembly</li> </ul>	<ul style="list-style-type: none"> <li>• identical fixing dimensions to safety switches TP</li> </ul>	
AS-Interface <i>Safety at Work</i> 	-	-	-	-	●	
Switching elements	Total switching contacts	3	3	3	3	4
	Conventional thermal current	4 A	4 A	2,5 A	4 A	4 A
	Switching current, min. (at 24V)	1 mA	1 mA	1 mA	30 mA	1 mA
	Mechanical life, max.	30x10 <sup>6</sup>	1x10 <sup>6</sup>	1x10 <sup>6</sup>	1x10 <sup>6</sup>	2x10 <sup>6</sup>
Environment	Housing material	reinforced thermoplastic	reinforced thermoplastic	reinforced thermoplastic	reinforced thermoplastic	reinforced thermoplastic
	Housing dimensions, min. (HxWxD)	77,5x25x32 mm	82x25x32 mm	78x30x15 mm	98x35x36 mm	125x40x42 mm
	Ambient temperature	-20 to +80 °C	-20 to +80 °C	-25 to +70 °C	-25 to +80 °C	-20 to +80 °C
	Degree of protection, max. acc. to IEC 60529	IP67	IP67	IP67	IP67	IP67
	LED display	-	-	-	-	-
	Approach/actuating directions					
Approach speed, max.	60 m/min.	20 m/min.	60 m/min.	20 m/min.	20 m/min.	
Zuhaltung	Solenoid operating voltage	-	-	-	-	-
	Power consumption	-	-	-	-	-
	Locking force, max.	-	-	-	-	-
Connection	Cable entry	3xM16x1.5	3xM16x1.5	-	M20x1.5	3xM20x1.5
	Connection cable (pre-assembled)	○	○	●	○	○
	Plug connector	●	●	-	●	●
Accessories	Actuator straight/straight rubber-cushioned		●/●	-/●	●/●	●/●
	Hinged actuator		-	●	●	●
	Min. door radius (hinged actuator)		-	50 mm	90 mm	90 mm
	Min. door radius (standard actuator)		150 mm	160 mm	1000 mm	1000 mm
	Bolts for safety guards		●	-	●	●

All data given refer to the respective minimal or maximal values for the entire series.

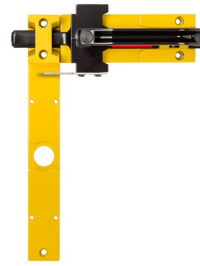
Plastic Housing

Safety Switches with Separate Actuator

	With guard locking	With guard locking and guard lock monitoring				
						
Safety switches SGP	Safety switches TQ	Safety switches STM	Safety switches TP / STP	Safety switches CTP	Safety switches TK	
						
<ul style="list-style-type: none"> <li>Actuating head made of metal, also as Twin version</li> </ul>	<ul style="list-style-type: none"> <li>compact housing</li> </ul>	<ul style="list-style-type: none"> <li>actuating head made of plastic or metal</li> </ul>	<ul style="list-style-type: none"> <li>TP: auxiliary, key auxiliary, emergency or escape release</li> <li>ideal for profile assembly</li> <li>also as Twin and BiState version</li> </ul>	<ul style="list-style-type: none"> <li>integrated transponder</li> <li>Cat. 4 / PL e</li> <li>compatible mounting</li> <li>also as Extended- and BiState version</li> </ul>	<ul style="list-style-type: none"> <li>very high locking force</li> <li>no protection against unintentional closing</li> </ul>	
●	–	–	●	●	–	
4	5	3	4	see product catalog	2	
4A	2,5A	4A	4A		4A	
1 mA	1 mA	1 mA	1 mA		1 mA	
2x10 <sup>6</sup>	1x10 <sup>6</sup>	2x10 <sup>6</sup>	1x10 <sup>6</sup>	1x10 <sup>6</sup>	1x10 <sup>6</sup>	
reinforced thermoplastic	reinforced thermoplastic	reinforced thermoplastic	reinforced thermoplastic	reinforced thermoplastic	reinforced thermoplastic	
123x40x42mm	75x75x15mm	96x79x38mm	192x40x42mm	204x40x42 mm	192x40x42mm	
-20 to +80 °C	-25 to +50 °C	-20 to +55 °C	-20 to +55 °C	-20 to +55 °C	-20 to +55 °C	
IP67	IP65	IP67	IP67	IP67 / IP69 / IP69K	IP67	
–	–	●	●	●	●	
						
20 m/min.	60 m/min.	20 m/min.	20 m/min.	20 m/min.	20 m/min.	
–	24V	24V/230V	24/110/230V	24V	24/48/230 V	
–	2,7W	6 W	8W	6W	8W	
–	500N	plastic 1000N metal 2000N	TP 1300N STP 2500 N	3900N	5000N	
3xM20x1.5	–	M20x1.5	3xM20x1.5	–	3xM20x1.5	
○	●	○	○	–	○	
●	–	●	●	1x M12/2x M12/1x M23	●	
●/●	–/●	–/●	●/●	–/●	–	
●	●	●	●	●	–	
200mm	50mm	200mm	TP 90 mm STP 200 mm	200mm	–	
300mm	160mm	300mm	TP 1000 mm STP 300 mm	300mm	–	
●	–	–	●	●	–	














# Safety Engineering at a Glance

## Bolts



Can be combined with	NZ, TP, STP, GP, SGP, STA, SGA, CTP	NZ.VZ, TZ, GP, TP, SGP, STP, SGA, STA, CTP	NM...VZ, NP, NZ.VZ, TZ, TX, GP, SGP, SGA, TP, STP, STA, CTP
Material	Plastic	Aluminum	Metal
Door hinge position	left and right	left and right	left and right
Detent mechanism open/closed	●/-	●/●	●/●
Escape release	●	●	●

# Safety Engineering at a Glance

	Emergency Stop		Rope Pull Switches	
				
	Emergency stop	Emergency stop	Rope pull switches RPS-M	Rope pull switches RPS
Approvals				
Features/specific advantages	<ul style="list-style-type: none"> <li>Built-in devices</li> </ul>	<ul style="list-style-type: none"> <li>With housing</li> </ul>	<ul style="list-style-type: none"> <li>Fast-action clamping and tensioning device with visualization</li> <li>integrated emergency stop function</li> </ul>	<ul style="list-style-type: none"> <li>Fast-action clamping and tensioning device with visualization</li> <li>integrated emergency stop function</li> </ul>
AS-Interface <i>Safety at Work</i> 	-	●	-	-
<b>Switching elements</b>				
Total switching contacts	4	3	4	4
Conventional thermal current	1 A	1 A	10 A	10 A
Switching current, min. (at 24V)	10 mA	10 mA	10 mA	10 mA
Mechanical life, min.	250.000	250.000	100.000	100.000
<b>Environment</b>				
Housing material	reinforced thermoplastic/policarbonate	reinforced thermoplastic/policarbonate	die-cast alloy	reinforced thermoplastic/policarbonate
Housing dimensions, min. (HxWxD)	65.6x30x29 mm	91.5x76x76 mm	282x90x88 mm	256x42x88 mm
Ambient temperature	-25 to +60 °C	-25 to +55 °C	-30 to +80 °C	-25 to +70 °C
Degree of protection max. acc. to IEC 60529	IP20/IP65	IP65	IP67	IP67
LED display	●	●	-	-
Approach/actuating directions				
Approach speed, max.	-	-	-	-
<b>Connection</b>				
Cable entry	-	2 x Ø 21.3 mm	3xM20x1.5 <sup>1)</sup>	3xM20x1.5 <sup>1)</sup>
Connection cable (pre-assembled)	-	-	-	-
Plug connector	-	●	●	●
Screw terminal	●	●	-	-

1) further versions upon request

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