



Product Overview

Safety Engineering



More than safety.



EUCHNER

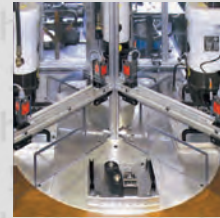
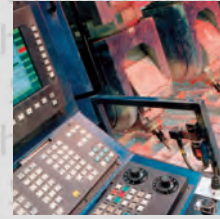
For decades, everything at EUCHNER has revolved around your safety. Safety to protect people, machines and products. If mechanical limit values specified for production are exceeded, EUCHNER safety switches all over the world can be relied on to stop machinery and equipment quickly.

Today, our products range from electromechanical and electronic components to intelligent safety solutions. Not only does EUCHNER look after greater safety, it also stands for a permanently compassionate and productive working environment.


















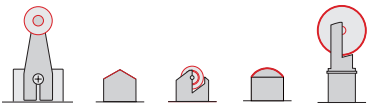
More than safety.

The right solution for every application




























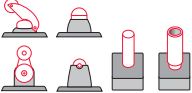
With this wide range of products we can provide the necessary technologies to offer the right solution for special requirements. Quality, reliability and precision are always at the centre of our attention. They represent concepts and values to which we feel totally committed. In this way, we develop high-quality product solutions ideally tailored to our customers' individual needs and the ultimate requirements of practical operations. This is precisely why new products are frequently developed not simply on behalf of but in collaboration with long-term customers. It is not without reason that we currently hold a leading international position in the field of safety systems.


























Safety Engineering at a Glance

		Position Switches with Safety Function			Metal Housing	
					Safety	
					Without guard locking	
						
		Position switches NZ	Single limit switches NB01	Single limit switches N1A	Safety switches NZ.VZ	Safety switches NX
Approvals		 			 	 
Features/specific advantages		According to EN50041	Compact design, chisel and roller plungers	According to DIN 43693	Basic housing according to EN 50041	Slim design, large insertion opening for actuator
AS-Interface <i>Safety at Work</i> 		●	–	–	●	●
Switching elements	Total switching contacts	4	1	1	4	4
	Switching contacts for door position	4	1	1	4	4
	Switching contacts for guard lock monitoring	–	–	–	–	–
	Conventional thermal current	4 A	6 A	6 A	4 A	4 A
	Switching current, min. (at 24V)	1 mA	1 mA	5 mA	1 mA	1 mA
Mechanical life, min.	30 x 10 ⁶	10 x 10 ⁶	30 x 10 ⁶ ²⁾	2 x 10 ⁶	2 x 10 ⁶	
Environment	Housing material	Anodized die-cast alloy	Anodized die-cast alloy	Anodized die-cast alloy	Anodized die-cast alloy	Cathodically dipped die-cast alloy
	Housing dimensions, min. (HxWxD)	100 x 40 x 42 mm	58 x 40 x 20 mm	60 x 76 x 28 mm	115 x 40 x 42 mm	160 x 42 x 52 mm
	Installation dimensions					
	Ambient temperature	-25 to +80 °C	-25 to +60 °C	-25 to +80 °C	-25 to +80 °C	-20 to +80 °C
	Deg. of protection, max., acc. to IEC 60529	IP 67	IP 67	IP 67	IP 67	IP 67
	LED display	●	–	●	●	●
	Approach/actuating directions	Depending on actuator 	Depending on actuator 	Depending on actuator 		
Approach speed, max.	300 m/min.	50 m/min.	80 m/min.	20 m/min.	20 m/min.	
Guard locking	Solenoid operating voltage					
	Power consumption					
	Locking force, max.					
	Locking force, acc. to GSET 19					
Connection	Cable entry	M 20 x 1.5 ¹⁾	M 12 x 1.5	2 x M 16 x 1.5 ¹⁾	M 20 x 1.5 ¹⁾	3 x M 20 x 1.5 ¹⁾
	Connection cable (pre-assembled)	○	○	○	○	○
	Plug connector	●	○	●	●	○
Accessories	Actuator straight/straight rubber-cushioned	Roller lever arm, chisel, roller and dome plungers, long roller plunger			●/–	–/●
	Hinged actuator,				●	●
	Door radius, min. (hinged actuator)				165 mm	100 mm
	Door radius, min. (standard actuator)				1000 mm	300 mm
	Bolts for safety guards				●	●
Detailed information in catalog	Safety Switches NZ/TZ			Safety Switches NZ/TZ Safety Products with Integrated Bus Interface	Safety Switches NX/TX	

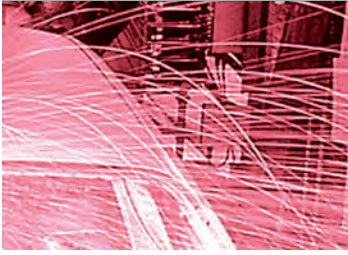




● available ● not available in all versions (see catalog) ○ available on request – not available

Switches with Separate Actuator			Plastic			
With guard locking		With guard locking and guard lock monitoring	Position Switches with Safety Function	Safety Switches with		
				Without guard locking		
						
Safety switches NZ.VZ.VS	Safety switches TZ	Safety switches TX	Position switches NM	Safety switches NM.VZA	Safety switches NP	Safety switches GP
	 	 	 	 	 	 
Basic housing according to EN 50041	Auxiliary, emergency or escape release	Slim design, auxiliary, key, emergency or escape release	Small design, various lever/plunger forms and hinged actuators	Small design, small approach radii	Basic housing according to EN 50047, ideal for profile assembly	Identical fixing dimensions to safety switches TP
–	●	●	–	–	–	●
4	8	4	3	3	3	4
4	4	2	3	3	3	4
Guard locking not monitored	4	3	–	–	–	–
4 A	4 A	4 A	4 A	4 A	4 A	4 A
1 mA	1 mA	1 mA	1 mA	1 mA	30 mA	1 mA
2 x 10 ⁶	2 x 10 ⁶	1 x 10 ⁶	30 x 10 ⁶	1 x 10 ⁶	1 x 10 ⁶	2 x 10 ⁶
Anodized die-cast alloy	Anodized die-cast alloy	Cathodically dipped die-cast alloy	Reinforced thermoplastic	Reinforced thermoplastic	Reinforced thermoplastic	Reinforced thermoplastic
115 x 40 x 42 mm	110 x 110 x 40 mm	240 x 42 x 59 mm	77.5 x 25 x 32 mm	82 x 25 x 32 mm	98 x 35 x 36 mm	125 x 40 x 42 mm
-25 to +80 °C	-25 to +80 °C	-20 to +80 °C	-20 to +80 °C	-20 to +80 °C	-20 to +80 °C	-20 to +80 °C
IP 67	IP 67	IP 67	IP 67	IP 67	IP 67	IP 67
●	●	●	–	–	–	–
						
20 m/min.	20 m/min.	20 m/min.	60 m/min.	20 m/min.	20 m/min.	20 m/min.
24/115/230V	24/115/230V	24/115/230V				
10W	7W	8W				
2000N	2000N	1700N				
1500N	1500N	1300N				
M 20 x 1.5 ¹⁾	M 20 x 1.5 ¹⁾	3 x M 20 x 1.5 ¹⁾	3 x M 16 x 1.5	3 x M 16 x 1.5	M 20 x 1.5	3 x M 20 x 1.5
○	○	○	○	○	○	○
●	●	●	●	●	●	●
●/–	●/–	–/●	Various actuation elements	●/●	●/●	●/●
●	●	●		–	●	●
165 mm	165 mm	100 mm		–	90 mm	90 mm
1000 mm	1000 mm	300 mm		150 mm	1000 mm	1000 mm
●	●	●		●	●	●
Safety Switches NZ/TZ	Safety Switches NZ/TZ Safety Products with Integrated Bus Interface	Safety Switches NX/TX Safety Products with Integrated Bus Interface	Safety Switches NM	Safety Switches NP/GP/TP Safety Products with Integrated Bus Interface		

1) Further versions upon request 2) Snap-action contact element 1 x 10⁶ 3) Approval pending

housing				Enabling Switches			Rope Pull Switch
Separate Actuator							
With guard locking and guard lock monitoring							
							
Safety switches STM	Safety switches TP	Safety switches STP	Safety switches TK	Enabling switches ZXE, ZSG, ZSE	Enabling switches ZSA/ZSB	Rope pull switch RPS	
 	 	 			 	 	
Actuating head made of plastic or metal	Auxiliary, key auxiliary, emergency or escape release, ideal for profile assembly	Actuating head made of metal, high locking force	Very high locking force, no protection against unintentional closing	Three-stage built-in version, single or dual-channel	Three-stage, single or dual-channel, kit available	Fast-action clamping and tensioning device with visualization, integrated emergency stop function	
–	●	●	–	–	–	–	
3	4	4	2	See product catalog	See product catalog	4	
2	2	2	1				
1	3	3	1				
4A	4A	4A	4A	4A	4A	10A	
1 mA	1 mA	1 mA	1 mA	1 mA	1 mA	10 mA	
1 x 10 ⁶	1 x 10 ⁶	1 x 10 ⁶	1 x 10 ⁶	1 x 10 ⁵	1 x 10 ⁵		
Reinforced thermoplastic	Reinforced thermoplastic	Reinforced thermoplastic	Reinforced thermoplastic	Plastic	Plastic	Reinforced thermoplastic	
96 x 79 x 38 mm	192 x 40 x 42 mm	190 x 40 x 42 mm	192 x 40 x 42 mm	See product catalog	See product catalog	256 x 42 x 88 mm	
-20 to +55 °C	-20 to +55 °C	-20 to +55 °C	-20 to +55 °C	-5 to +60 °C	-5 to +60 °C	-25 to +70 °C	
IP67	IP67	IP67	IP67	IP65 (installed)	IP67	IP67	
–	●	●	●	–	●	–	
							
20 m/min.	20 m/min.	20 m/min.	20 m/min.				
24 V	24/110/230V	24V	24V				
6.5 W	8W	8W	8W				
Plastic 1000N Metal 2000N	1200N	2500N	5000N				
Plastic 700N Metal 1500N	1000N	2000N	-				
M20 x 1.5	3 x M20 x 1.5	3 x M20 x 1.5	3 x M20 x 1.5		Ø 4-8 mm	3 x M20 x 1.5	
○	○	○	○	–	●	–	
●	●	●	●	–	●	●	
–/●	●/●	–/●	●				
●	●	●	●				
100 mm	90 mm	100 mm					
300 mm	1000 mm	300 mm					
○	●	●					
Safety Switches STM	Safety Switches NP/GP/TP Safety Products with Integrated Bus Interface	Safety Switches STP	Safety switches TK	Enabling Switches Safety Products with Integrated Bus Interface		Rope Pull Switch RPS	

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

		Safety Relays	
		Safety Relays ESM	Modular Safety System ESM-F
		 <p>ESM</p>	 <p>ESM-F</p>
Approvals			
Applications		<ul style="list-style-type: none"> • Up to category 4 according to EN 954-1 • Stop category 0 and 1 • Requirement level III C according to EN 574 for two-hand circuit 	<ul style="list-style-type: none"> • Up to category 4 according to EN 954-1 • Stop category 0 and 1 • Requirement level III C according to EN 574 for two-hand circuit
ESM safety relays / ESM-F base modules		<ul style="list-style-type: none"> • 1 or 2-channel control • Up to 4 outputs (time-delay or non-time-delay) • Version for two-hand circuits • LED status indicators • Feedback loop • Start button (monitoring possible) • Short circuit monitoring • Earth fault and ground fault monitoring 	<ul style="list-style-type: none"> • Up to four inputs per module • 1 or 2-channel control • 3 outputs • Comprehensive LED status indicators and diagnostic functions • Semiconductor outputs • Feedback loop • Start button (monitoring possible) • Short circuit monitoring • Earth fault and ground fault monitoring • Formation of safety groups
ESM contact expansions / ESM-F output modules		<ul style="list-style-type: none"> • Up to 4 outputs (time-delay or non-time-delay) • LED status indicators 	<ul style="list-style-type: none"> • Outputs can be expanded as required (time-delay or non-time-delay) • Comprehensive LED status indicators and diagnostic functions • Feedback loop
ESM-F input modules			<ul style="list-style-type: none"> • Version for two-hand circuits • Up to six inputs per module • Optional: inputs for safety switches with NC/NO contacts • Input module for ESPE (optoelectronic safety components) • 1 or 2-channel control • Comprehensive LED status indicators and diagnostic functions • Short circuit monitoring • Earth fault and ground fault monitoring
Connection data	Switching current AC max.	6A/8A	6A/8A
	Switching voltage AC max.	250V	250V
	Operating voltage	24V AC/DC, 115/230VAC	24V DC
	Mechanical life, max.	1 x 10 ⁷ operating cycles	1 x 10 ⁷ operating cycles
	Connection type	Screw terminals	Plug-in screw terminals/spring terminals
Environment	Housing material	Plastic	Plastic
	Mounting	DIN rail	DIN rail
	Dimensions (H x W x D)	114 x 99 x 22.5 mm	114 x 99 x 22.5 mm
	Ambient temperature (with U _b = 24V)	-15 to +60 °C	-15 to +60 °C
	Deg. of protection, acc. to IEC/EN 60529	IP 20	IP 20
LEDs	●	●	
Detailed information in catalog		Safety Relays ESM/ESM-F	

Safety Engineering at a Glance



Non-Contact Safety Switches				
Transponder Coding			Magnetic Coding	
	Safety switches CES-A-C5	Safety switches CES-A-A	Safety switches CEM	Safety switches CMS
Approvals				
Safety category acc. to EN IEC 954-1	4	4	4	3
AS-Interface <i>Safety at Work</i>	-	●	●	-
Variants				
Unique coding (fixed actuator allocation)	●	●	●	-
Multiple coding (detects all EUCHNER actuators)	●	●	-	●
Safety switches with position sensor	●	-	-	-
Inputs/outputs				
Read heads	1	1 to 4	1 to 4	1 to 30
Relay safety outputs	-	2	2	1 (redundant)
Semiconductor safety outputs	2	-	-	-
Monitoring outputs (semiconductor)	1	1	1	1 (relay)
Monitoring/Connection feedback loop	-	1	1	1
Monitoring/Connection start button	-	1	1	-
Switching current per safety output	400 mA	6 A	6 A	4 A
Mechanical life, min.	not limited	10 x 10 ⁶	10 x 10 ⁶	10 x 10 ⁶
Environment				
Evaluation unit	Integrated in read head			
Mounting	Decentralized	DIN rail	DIN rail	DIN rail
Dimensions, min. (HxWxD)	117 x 40 x 40 mm	114 x 99 x 22.5 mm	114 x 99 x 22.5 mm	89 x 80 x 25 mm
Ambient temperature	-20 to +55 °C	0 to +55 °C	0 to +55 °C	0 to +50 °C
Degree of protection, max., acc. to EN IEC 60529	IP 67	IP 20	IP 20	IP 20
LEDs	●	●	●	●
Read head/actuator				
Ambient temperature	-25 to +70 °C	-25 to +70 °C	-25 to +50 °C	-20 to +60 °C
Degree of protection, max., acc. to EN IEC 60529	IP 67	IP 67	IP 67	IP 67
Operating range, max.	20 mm	16 mm	2 mm	18 mm
Guard locking				
Solenoid operating voltage			24 VDC	
Power consumption, max.			5 W	
Adhesive force, max.			1000 N	
Connection				
Evaluation unit	Plug connector M12	Plug-in terminals	Plug-in terminals	Plug-in terminals
Read head cable/plug connector M8	-	●/●	●/●	●/○
Accessories				
Bolts for safety guards	●	●	●	○

Detailed information in catalog	Non-Contact Safety Switches CES/CEM Safety Products with Integrated Bus Interface	Non-Contact Safety Switches CMS
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● available ● not available in all versions (see catalog) ○ available on request - not available

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