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Safety sensor eloProtect M 165MSK

Safety sensor eloProtectM completely redefines the standard for magnetic safety sensors. The magnetic safety switch offers increased operating distances and offset values for increased flexibility during installation and a high function stability. The new housing is robust and resistant to mechanical influences and aggressive media.

The safety sensor demonstrates strong resistance to cleaning agents (ECOLAB). The high IP6K9K protection class and the high temperature resistance of up to +80 °C make this ideal for use in the food and packaging industries as well as in the chemical and pharmaceutical industries.

Technical specifications

Dual mounting options enables the door hingeto be mounted on the right or left (no extra variant necessary)

Available connection types: cable outlet and M12 pigtail

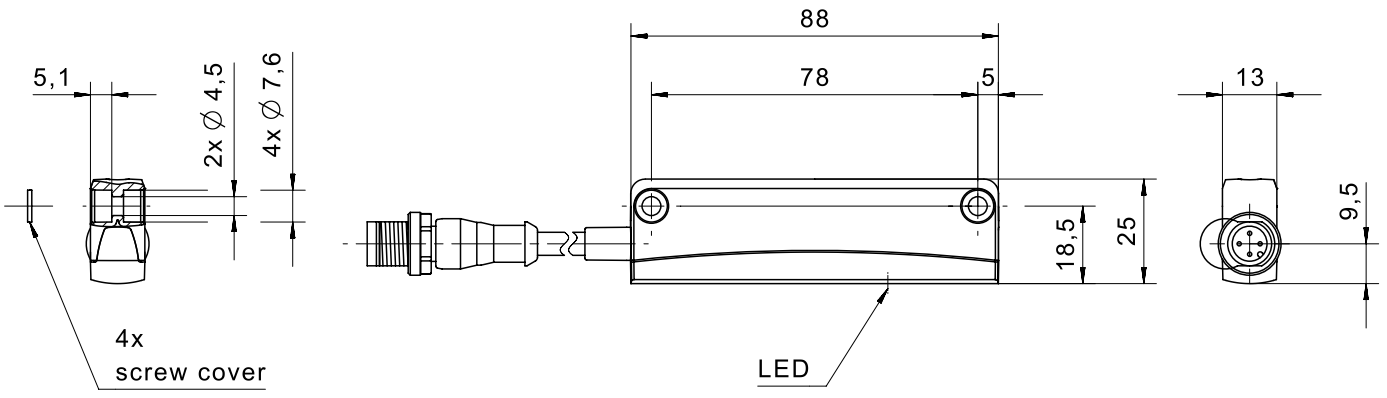
Simple diagnosis through optional LED and control contact

Screw covers prevent easy removal and the accumulation of dirt

Protection class IP6K9K (ISO 20653)

Technical drawing

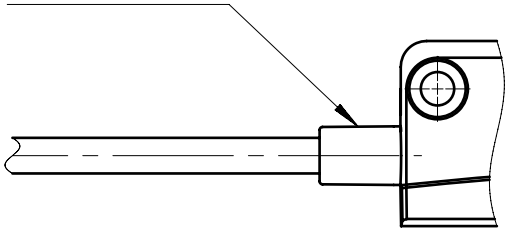
IMAGE 1/4

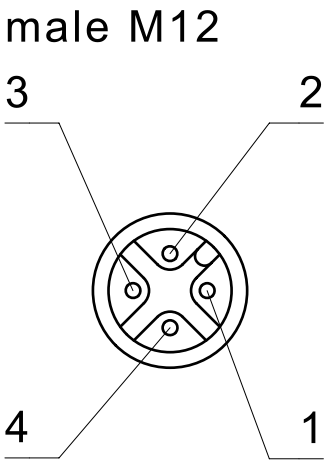


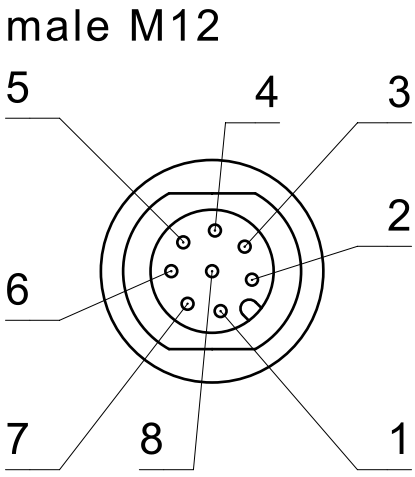
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IMAGE 2/4





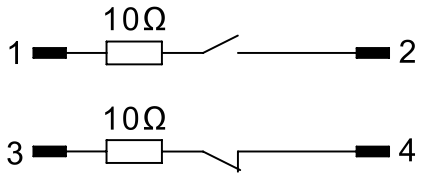


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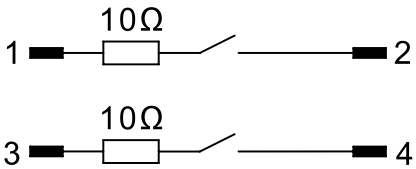
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IMAGE 3/4

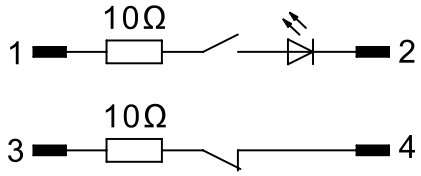
165MSK.0H1G, 165MSK.0H1K



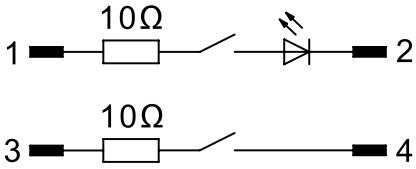
165MSK.0H1A, 165MSK.0H1E



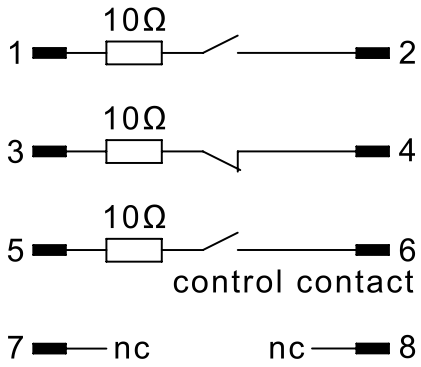
165MSK.0H1H



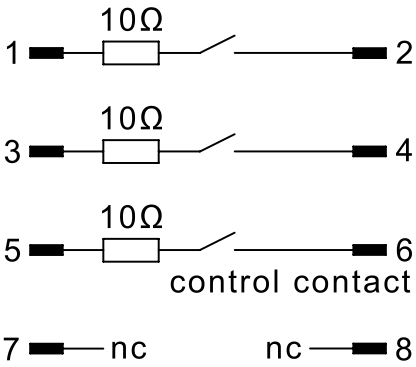
165MSK.0H1B



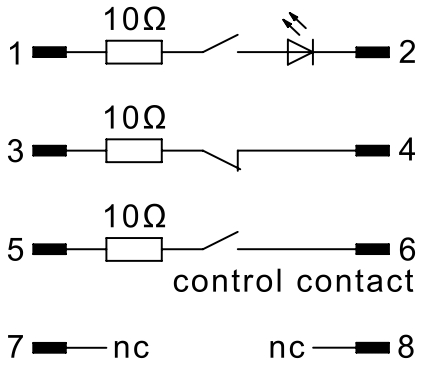
165MSK.0J1I



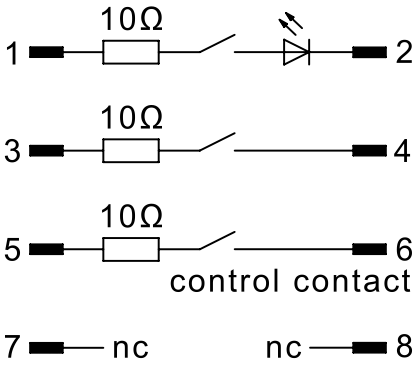
165MSK.0J1C



165MSK.0J1J



165MSK.0J1D

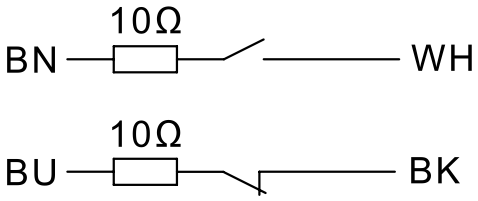


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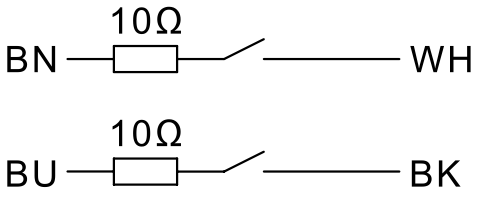
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IMAGE 4/4

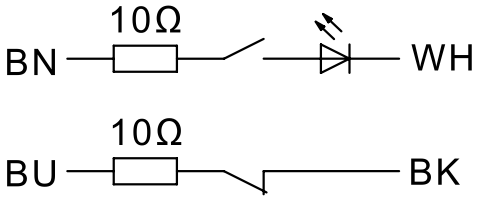
165MSK.0K1G, 165MSK.0K1K



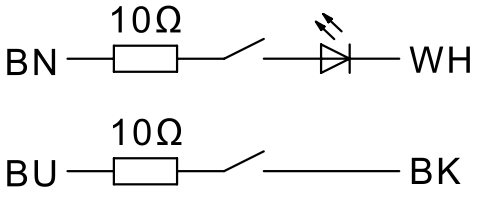
165MSK.0K1A, 165MSK.0K1E



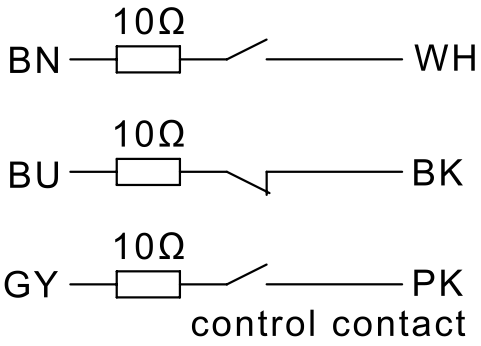
165MSK.0K1H



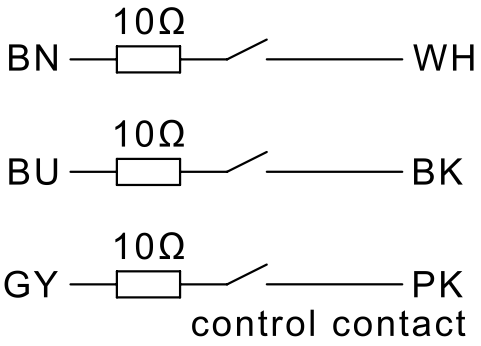
165MSK.0K1B



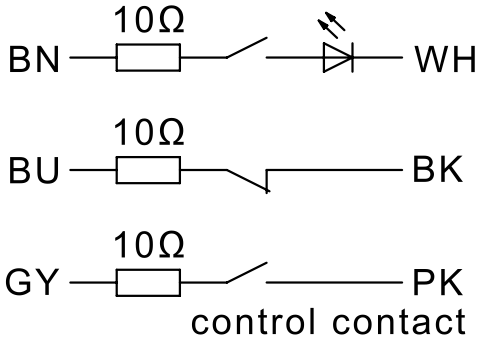
165MSK.0K1I



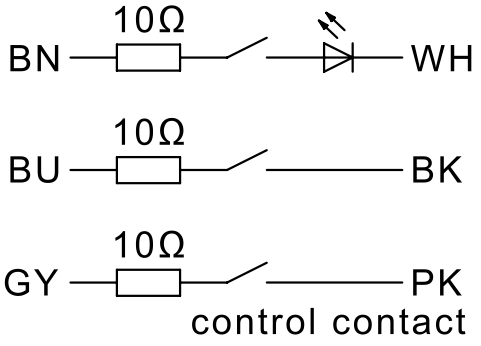
165MSK.0K1C



165MSK.0K1J



165MSK.0K1D

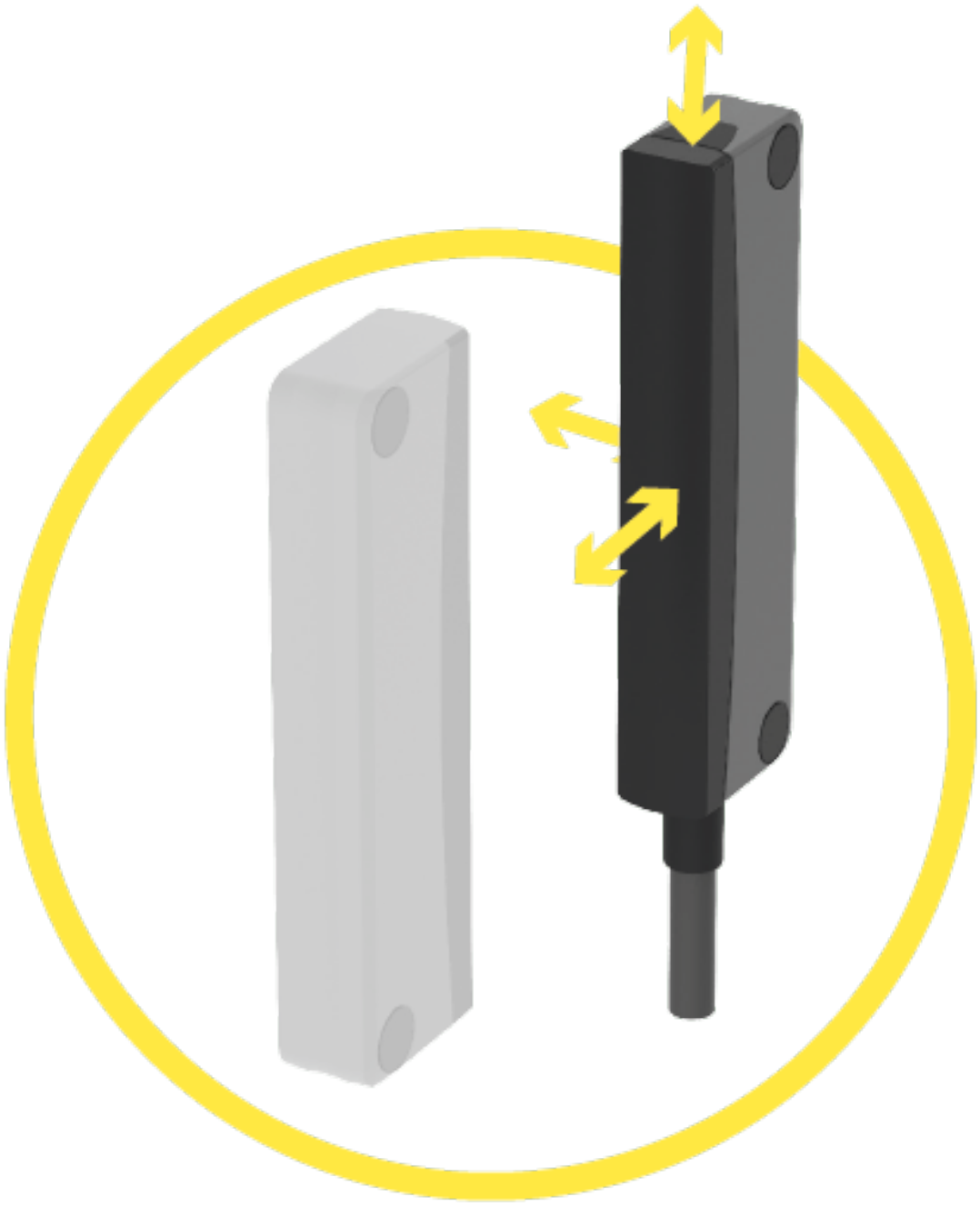


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Product options

IMAGE 1/3



Suitable for front, side and 90° actuation. Operating distance (Sao) from 5 to 14 mm. Assured switch-off distance (Sar) from 8 to 18 mm.

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IMAGE 2/3

ORDERING KEY

165MSK	00				Safety sensor, rectangular, plastic
		K1			Connection cable – PVC - 1m
		H1			Connection pigtail – PVC – M12, 4-pin
		J1			Connection pigtail – PVC – M12, 8-pin
			A		N.O./N.O. – front actuation
			B		N.O./N.O. – LED – front actuation
			C		N.O./N.O./control contact – front actuation
			D		N.O./N.O./control contact – LED – front actuation
			E		N.O./N.O. – side actuation
			F		N.O./N.O. – LED – side actuation
			G		N.O./N.C. – front actuation
			H		N.O./N.C. – LED – front actuation
			I		N.O./N.C./control contact – front actuation
			J		N.O./N.C./control contact – LED – front actuation
			K		N.O./N.C. – side actuation
			L		N.O./N.C. – LED – side actuation
					Other available cable lengths (only with "K" at 9th position)
				-3	3 m
				-5	5 m
				-10	10 m
					Other cable materials, cable lengths and connector types on request

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IMAGE 3/3

MATCHING ACTUATORS

Actuators	Actuation direction	165MSK00.1A 165MSK00.1G			165MSK00.1E 165MSK00.1K			165MSK00.1B 165MSK00.1H		
		SO_{min}	S_{ao}	S_{ar}	SO_{min}	S_{ao}	S_{ar}	SO_{min}	S_{ao}	S_{ar}
165 MBK 001	Front	0.5	5	14	-	-	-	0.5	5	14
165 MBK 101		0.5	8	18	-	-	-	0.5	8	18
165 MBK 201	Front 90°	0.5	5	14	-	-	-	0.5	5	14
165 MBK 301		0.5	8	18	-	-	-	0.5	8	18
165 MBK 001	Side	-	-	-	0.5	5	14	-	-	-
165 MBK 101		-	-	-	-	8	18	-	-	-
165 MBK 201	Side 90°	-	-	-	0.5	5	14	-	-	-
165 MBK 301		-	-	-	-	8	18	-	-	-

Actuators	Actuation direction	165MSK00.1F 165MSK00.1L			165MSK00.1C 165MSK00.1I			165MSK00.1D 165MSK00.1J		
		SO_{min}	S_{ao}	S_{ar}	SO_{min}	S_{ao}	S_{ar}	SO_{min}	S_{ao}	S_{ar}
165 MBK 001	Front	-	-	-	0.5	5	14	0.5	5	14
165 MBK 101		-	-	-	0.5	8	18	0.5	8	18
165 MBK 201	Front 90°	-	-	-	0.5	5	14	0.5	5	14
165 MBK 301		-	-	-	0.5	8	18	0.5	8	18
165 MBK 001	Side	0.5	5	14	-	-	-	-	-	-
165 MBK 101		-	8	18	-	-	-	-	-	-
165 MBK 201	Side 90°	0.5	5	14	-	-	-	-	-	-
165 MBK 301		-	8	18	-	-	-	-	-	-

SO_{min} = minimum switching distance (mm), S_{ao} = operating distance (mm), S_{ar} = assured switch-off distance (mm)

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Article characteristics

Attribute	165MSK00H1A	165MSK00H1B	165MSK00H1F	165MSK00H1G	165MSK00H1H	165MSK00H1K
Min. switching voltage	19.2 V DC					
Max. switching voltage	28.8 V DC					
Max. switching current	0.2 A					
Max. switching current with LED	–	0.01 A		–	0.01 A	–
Max. switching power	3 W					
Switching frequency	5 Hz					
Assured switching distance (Sao)	5 mm					
Assured switch-off distance (Sar)	14 mm					
Minimum switching distance (S0 min)	0.5 mm					
LED display	No	single-coloured		No	single-coloured	No
Actuation	front		side	front		side
Switching principle	magnetic					
Series resistor	10 Ohm					
Technology	Reed					
Contact form	NO/NO			NO/NC		
Pollution degree	3					
Coding acc. to EN ISO 14119	Low					
B10d acc. to EN ISO 13849-1	20000000					
Type acc. to EN ISO 14119	4					
Mission time in years	20 a					
Structure acc. to EN ISO 13849-1	Two-channel					
Housing colour	grau, schwarz					
Housing design	rectangular					
Dimensions	25 x 88 x 13 mm					
Housing material	PBT, PC					
Cable material	PVC					
Protection class	III					
Protection class	IP67 DIN EN 60529 - IP6K9K ISO 20653					
Protection class, connector	IP67 DIN EN 60529					

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Attribute	165MSK00H1A	165MSK00H1B	165MSK00H1F	165MSK00H1G	165MSK00H1H	165MSK00H1K
Operating temperature min.	-25 °C					
Max. operating temperature	80 °C					
Min. cable temperature range, moving	-5 °C					
Max. cable temperature range, moving	80 °C					
Min. cable temperature range, fixed installation	-30 °C					
Max. cable temperature range, fixed installation	80 °C					
Shock resistance (Norm)	30g / 11ms					
Vibration resistance (Norm)	10 - 55Hz					
Min. storage temperature	-25 °C					
Max. storage temperature	80 °C					
Mounting type	screwed					
cannot be mounted flush	yes					
Detent present	no					
Connector type	M12x1 - 4 polig					
Cable length	0.15 m					
Number of strands	4					
Wire cross section	0.25 mm²					
Certified in accordance with	–	UL				
CE label	yes					
Possible actuators	165MBK001					

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Attribute	165MSK00H1L	165MSK00J1C	165MSK00J1D	165MSK00J1I	165MSK00J1J	165MSK00K1A
Min. switching voltage	19.2 V DC					
Max. switching voltage	28.8 V DC					
Max. switching current	0.2 A					
Max. switching current with LED	0.01 A	–	0.01 A	–	0.01 A	–
Max. switching power	3 W					
Switching frequency	5 Hz					
Assured switching distance (Sao)	5 mm					
Assured switch-off distance (Sar)	14 mm					
Minimum switching distance (S0 min)	0.5 mm					
LED display	single-coloured	No	single-coloured	No	single-coloured	No
Actuation	side	front				
Switching principle	magnetic					
Series resistor	10 Ohm					
Technology	Reed					
Contact form	NO/NC	NO/NO/NO (Kontrollkontakt)		NO/NC/NO		NO/NO
Pollution degree	3					
Coding acc. to EN ISO 14119	Low					
B10d acc. to EN ISO 13849-1	20000000					
Type acc. to EN ISO 14119	4					
Mission time in years	20 a					
Structure acc. to EN ISO 13849-1	Two-channel					
Housing colour	grau, schwarz					
Housing design	rectangular					
Dimensions	25 x 88 x 13 mm					
Housing material	PBT, PC					
Cable material	PVC					
Protection class	III					
Protection class	IP67 DIN EN 60529 - IP6K9K ISO 20653					
Protection class, connector	IP67 DIN EN 60529					–
Operating temperature min.	-25 °C					

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Attribute	165MSK00H1L	165MSK00J1C	165MSK00J1D	165MSK00J1I	165MSK00J1J	165MSK00K1A
Max. operating temperature	80 °C					
Min. cable temperature range, moving	-5 °C					
Max. cable temperature range, moving	80 °C					
Min. cable temperature range, fixed installation	-30 °C					
Max. cable temperature range, fixed installation	80 °C					
Shock resistance (Norm)	30g / 11ms					
Vibration resistance (Norm)	10 - 55Hz					
Min. storage temperature	-25 °C					
Max. storage temperature	80 °C					
Mounting type	screwed					
cannot be mounted flush	yes					
Detent present	no					
Connector type	M12x1 - 4 polig	M12x1 - 8 polig				–
Cable length	0.15 m					1 m
Number of strands	4	8				4
Wire cross section	0.25 mm²					
Certified in accordance with	UL					
CE label	yes					
Possible actuators	165MBK001					

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Attribute	165MSK00K1B	165MSK00K1C	165MSK00K1D	165MSK00K1F	165MSK00K1G	165MSK00K1H
Min. switching voltage	19.2 V DC					
Max. switching voltage	28.8 V DC					
Max. switching current	0.2 A					
Max. switching current with LED	0.01 A	–	0.01 A		–	0.01 A
Max. switching power	3 W					
Switching frequency	5 Hz					
Assured switching distance (Sao)	5 mm					
Assured switch-off distance (Sar)	14 mm					
Minimum switching distance (S0 min)	0.5 mm					
LED display	single-coloured	No	single-coloured		No	single-coloured
Actuation	front			side	front	
Switching principle	magnetic					
Series resistor	10 Ohm					
Technology	Reed					
Contact form	NO/NO	NO/NO/NO (Kontrollkontakt)		NO/NO	NO/NC	
Pollution degree	3					
Coding acc. to EN ISO 14119	Low					
B10d acc. to EN ISO 13849-1	20000000					
Type acc. to EN ISO 14119	4					
Mission time in years	20 a					
Structure acc. to EN ISO 13849-1	Two-channel					
Housing colour	grau, schwarz					
Housing design	rectangular					
Dimensions	25 x 88 x 13 mm					
Housing material	PBT, PC					
Cable material	PVC					
Protection class	III					
Protection class	IP67 DIN EN 60529 - IP6K9K ISO 20653					
Protection class, connector	–					
Operating temperature min.	-25 °C					

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Attribute	165MSK00K1B	165MSK00K1C	165MSK00K1D	165MSK00K1F	165MSK00K1G	165MSK00K1H
Max. operating temperature	80 °C					
Min. cable temperature range, moving	-5 °C					
Max. cable temperature range, moving	80 °C					
Min. cable temperature range, fixed installation	-30 °C					
Max. cable temperature range, fixed installation	80 °C					
Shock resistance (Norm)	30g / 11ms					
Vibration resistance (Norm)	10 - 55Hz					
Min. storage temperature	-25 °C					
Max. storage temperature	80 °C					
Mounting type	screwed					
cannot be mounted flush	yes					
Detent present	no					
Connector type	–					
Cable length	1 m					
Number of strands	4	6		4		
Wire cross section	0.25 mm²					
Certified in accordance with	UL					
CE label	yes					
Possible actuators	165MBK001					

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Attribute	165MSK00K1I	165MSK00K1J	165MSK00K1K	165MSK00K1L	165MSK00K1H31	165MSK00H1A31
Min. switching voltage	19.2 V DC					
Max. switching voltage	28.8 V DC					
Max. switching current	0.2 A					
Max. switching current with LED	–	0.01 A	–	0.01 A	–	
Max. switching power	3 W					
Switching frequency	5 Hz					
Assured switching distance (Sao)	5 mm					
Assured switch-off distance (Sar)	14 mm					
Minimum switching distance (S0 min)	0.5 mm					
LED display	No	single-coloured	No	single-coloured	No	
Actuation	front		side		front	
Switching principle	magnetic					
Series resistor	10 Ohm					
Technology	Reed					
Contact form	NO/NC/NO		NO/NC		NO/NO	
Pollution degree	3					
Coding acc. to EN ISO 14119	Low					
B10d acc. to EN ISO 13849-1	20000000					
Type acc. to EN ISO 14119	4					
Mission time in years	20 a			–	20 a	
Structure acc. to EN ISO 13849-1	Two-channel					
Housing colour	grau, schwarz					
Housing design	rectangular					
Dimensions	25 x 88 x 13 mm					
Housing material	PBT, PC					
Cable material	PVC					
Protection class	III					
Protection class	IP67 DIN EN 60529 - IP6K9K ISO 20653					
Protection class, connector	–					IP67 DIN EN 60529

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Attribute	165MSK00K1I	165MSK00K1J	165MSK00K1K	165MSK00K1L	165MSK00K1H31	165MSK00H1A31
Operating temperature min.	-25 °C					
Max. operating temperature	80 °C					
Min. cable temperature range, moving	-5 °C					
Max. cable temperature range, moving	80 °C					
Min. cable temperature range, fixed installation	-30 °C					
Max. cable temperature range, fixed installation	80 °C					
Shock resistance (Norm)	30g / 11ms					
Vibration resistance (Norm)	10 - 55Hz					
Min. storage temperature	-25 °C					
Max. storage temperature	80 °C					
Mounting type	screwed					
cannot be mounted flush	yes					
Detent present	no					
Connector type	–					M12x1 - 4 polig
Cable length	1 m					0.15 m
Number of strands	6		4			
Wire cross section	0.25 mm²					
Certified in accordance with	UL					–
CE label	yes					
Possible actuators	165MBK001					

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Attribute	165MSK00H1E	165MSK00K1E
Min. switching voltage	19.2 V DC	
Max. switching voltage	28.8 V DC	
Max. switching current	0.2 A	
Max. switching current with LED	–	
Max. switching power	3 W	
Switching frequency	5 Hz	
Assured switching distance (Sao)	5 mm	
Assured switch-off distance (Sar)	14 mm	
Minimum switching distance (S0 min)	0.5 mm	
LED display	No	
Actuation	front	side
Switching principle	magnetic	
Series resistor	10 Ohm	
Technology	Reed	
Contact form	NO/NO	
Pollution degree	3	
Coding acc. to EN ISO 14119	Low	
B10d acc. to EN ISO 13849-1	20000000	
Type acc. to EN ISO 14119	4	
Mission time in years	20 a	
Structure acc. to EN ISO 13849-1	Two-channel	
Housing colour	grau, schwarz	
Housing design	rectangular	
Dimensions	25 x 88 x 13 mm	
Housing material	PBT, PC	
Cable material	PVC	
Protection class	III	
Protection class	IP67 DIN EN 60529 - IP6K9K ISO 20653	
Protection class, connector	IP67 DIN EN 60529	–
Operating temperature min.	-25 °C	
Max. operating temperature	80 °C	

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Attribute	165MSK00H1E	165MSK00K1E
Min. cable temperature range, moving	-5 °C	
Max. cable temperature range, moving	80 °C	
Min. cable temperature range, fixed installation	-30 °C	
Max. cable temperature range, fixed installation	80 °C	
Shock resistance (Norm)	30g / 11ms	
Vibration resistance (Norm)	10 - 55Hz	
Min. storage temperature	-25 °C	
Max. storage temperature	80 °C	
Mounting type	screwed	
cannot be mounted flush	yes	
Detent present	no	
Connector type	M12x1 - 4 polig	-
Cable length	0.15 m	1 m
Number of strands	4	
Wire cross section	0.25 mm²	
Certified in accordance with	-	UL
CE label	yes	
Possible actuators	165MBK001	