



## 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 hinge to 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

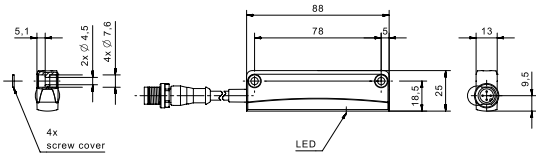


IMAGE 2/4

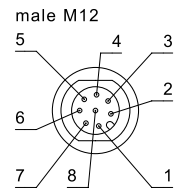
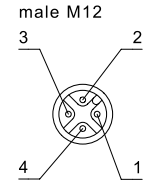
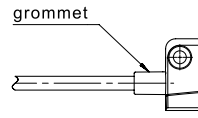


IMAGE 3/4

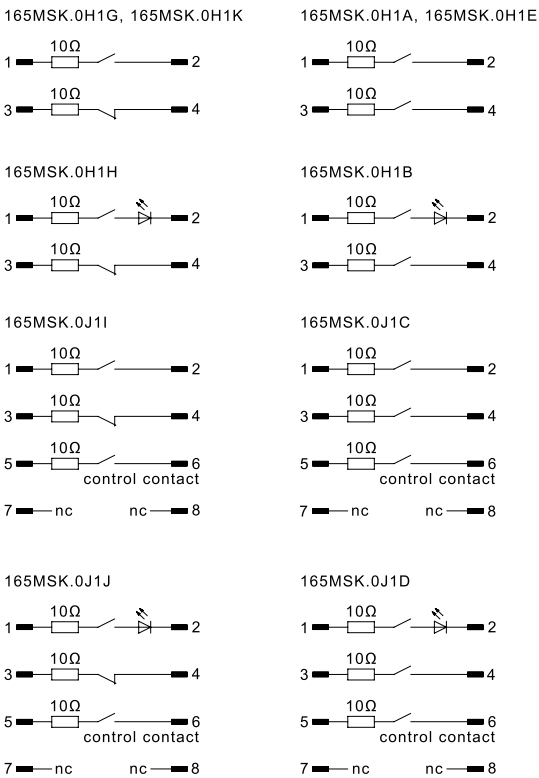
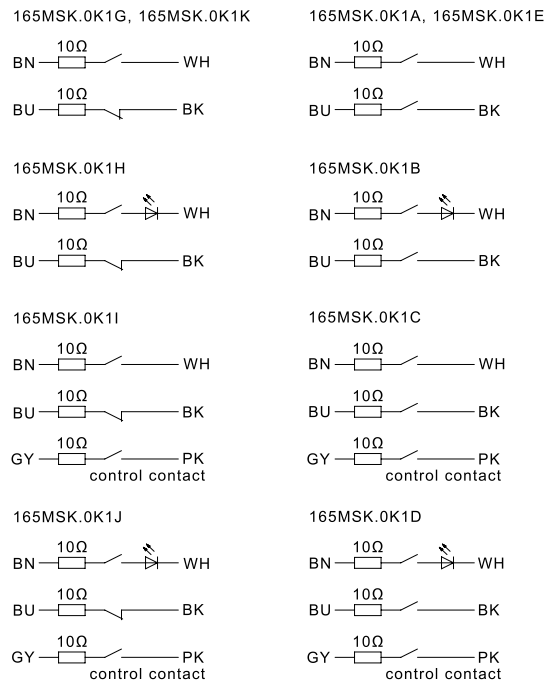


IMAGE 4/4



## Electrical data

Attribute	165MSK00H1A	165MSK00H1B	165MSK00H1E	165MSK00H1F	165MSK00H1G	165MSK00H1H ▶
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	No	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/NC	

## Electrical data

Attribute	165MSK00H1K	165MSK00H1L	165MSK00J1C	165MSK00J1D	165MSK00J1I	165MSK00J1J ▶
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	No	single-coloured	No	single-coloured	No	single-coloured
Actuation	side			front		
Switching principle	magnetic					
Series resistor	10 Ohm					
Technology	Reed					
Contact form	NO/NC		NO/NO/NO		NO/NC/NO	

## Electrical data

Attribute	165MSK00K1A	165MSK00K1B	165MSK00K1C	165MSK00K1D	165MSK00K1E	165MSK00K1F ▶
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	No	single-coloured	No	single-coloured	No	single-coloured
Actuation	front				side	
Switching principle	magnetic					
Series resistor	10 Ohm					
Technology	Reed					
Contact form	NO/NO		NO/NO/NO		NO/NO	

## Electrical data

Attribute	165MSK00K1G	165MSK00K1H	165MSK00K1I	165MSK00K1J	165MSK00K1K	165MSK00K1L ▶
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	No	single-coloured	No	single-coloured	No	single-coloured
Actuation	front				side	
Switching principle	magnetic					
Series resistor	10 Ohm					
Technology	Reed					
Contact form	NO/NC		NO/NC/NO		NO/NC	

## Electrical data

Attribute	165MSK00K1H31
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
Switching principle	magnetic
Series resistor	10 Ohm
Technology	Reed
Contact form	NO/NO

## Safety-related characteristics

Attribute	165MSK00H1A	165MSK00H1B	165MSK00H1E	165MSK00H1F	165MSK00H1G	165MSK00H1H ▶
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					

### Safety-related characteristics

Attribute	165MSK00H1K	165MSK00H1L	165MSK00J1C	165MSK00J1D	165MSK00J1I	165MSK00J1J ▶
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					

### Safety-related characteristics

Attribute	165MSK00K1A	165MSK00K1B	165MSK00K1C	165MSK00K1D	165MSK00K1E	165MSK00K1F ▶
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					

### Safety-related characteristics

Attribute	165MSK00K1G	165MSK00K1H	165MSK00K1I	165MSK00K1J	165MSK00K1K	165MSK00K1L ▶
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					



## Safety-related characteristics

Attribute	165MSK00K1H31
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

## Properties

Attribute	165MSK00H1A	165MSK00H1B	165MSK00H1E	165MSK00H1F	165MSK00H1G	165MSK00H1H ▶
Housing colour	grau, schwarz					

## Properties

Attribute	165MSK00H1K	165MSK00H1L	165MSK00J1C	165MSK00J1D	165MSK00J1I	165MSK00J1J ▶
Housing colour	grau, schwarz					

## Properties

Attribute	165MSK00K1A	165MSK00K1B	165MSK00K1C	165MSK00K1D	165MSK00K1E	165MSK00K1F ▶
Housing colour	grau, schwarz					

## Properties

Attribute	165MSK00K1G	165MSK00K1H	165MSK00K1I	165MSK00K1J	165MSK00K1K	165MSK00K1L ▶
Housing colour	grau, schwarz					

## Properties

Attribute	165MSK00K1H31
Housing colour	grau, schwarz

## Mechanical data

Attribute	165MSK00H1A	165MSK00H1B	165MSK00H1E	165MSK00H1F	165MSK00H1G	165MSK00H1H ▶
Housing design	rectangular					
Dimensions	25 x 88 x 13 mm					
cannot be mounted flush	yes					

## Mechanical data

Attribute	165MSK00H1K	165MSK00H1L	165MSK00J1C	165MSK00J1D	165MSK00J1I	165MSK00J1J ▶
Housing design	rectangular					
Dimensions	25 x 88 x 13 mm					
cannot be mounted flush	yes					

## Mechanical data

Attribute	165MSK00K1A	165MSK00K1B	165MSK00K1C	165MSK00K1D	165MSK00K1E	165MSK00K1F ▶
Housing design	rectangular					
Dimensions	25 x 88 x 13 mm					
cannot be mounted flush	yes					

## Mechanical data

Attribute	165MSK00K1G	165MSK00K1H	165MSK00K1I	165MSK00K1J	165MSK00K1K	165MSK00K1L ▶
Housing design	rectangular					
Dimensions	25 x 88 x 13 mm					
cannot be mounted flush	yes					

## Mechanical data

Attribute	165MSK00K1H31
Housing design	rectangular
Dimensions	25 x 88 x 13 mm
cannot be mounted flush	yes

## Material information

Attribute	165MSK00H1A	165MSK00H1B	165MSK00H1E	165MSK00H1F	165MSK00H1G	165MSK00H1H ▶
Housing material	PBT, PC					
Cable material	PVC					

## Material information

Attribute	165MSK00H1K	165MSK00H1L	165MSK00J1C	165MSK00J1D	165MSK00J1I	165MSK00J1J ▶
Housing material	PBT, PC					
Cable material	PVC					

## Material information

Attribute	165MSK00K1A	165MSK00K1B	165MSK00K1C	165MSK00K1D	165MSK00K1E	165MSK00K1F ▶
Housing material	PBT, PC					
Cable material	PVC					

## Material information

Attribute	165MSK00K1G	165MSK00K1H	165MSK00K1I	165MSK00K1J	165MSK00K1K	165MSK00K1L ▶
Housing material	PBT, PC					
Cable material	PVC					

## Material information

Attribute	165MSK00K1H31
Housing material	PBT, PC
Cable material	PVC

## Environmental conditions

Attribute	165MSK00H1A	165MSK00H1B	165MSK00H1E	165MSK00H1F	165MSK00H1G	165MSK00H1H ▶
Pollution degree	3					
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					
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					

## Environmental conditions

Attribute	165MSK00H1K	165MSK00H1L	165MSK00J1C	165MSK00J1D	165MSK00J1I	165MSK00J1J ▶
<b>Pollution degree</b>	3					
<b>Protection class</b>	III					
<b>Protection class</b>	IP67 DIN EN 60529 - IP6K9K ISO 20653					
<b>Protection class, connector</b>	IP67 DIN EN 60529					
<b>Operating temperature min.</b>	-25 °C					
<b>Max. operating temperature</b>	80 °C					
<b>Min. cable temperature range, moving</b>	-5 °C					
<b>Max. cable temperature range, moving</b>	80 °C					
<b>Min. cable temperature range, fixed installation</b>	-30 °C					
<b>Max. cable temperature range, fixed installation</b>	80 °C					
<b>Shock resistance (Norm)</b>	30g / 11ms					
<b>Vibration resistance (Norm)</b>	10 - 55Hz					
<b>Min. storage temperature</b>	-25 °C					
<b>Max. storage temperature</b>	80 °C					

## Environmental conditions

Attribute	165MSK00K1A	165MSK00K1B	165MSK00K1C	165MSK00K1D	165MSK00K1E	165MSK00K1F ▶
Pollution degree	3					
Protection class	III					
Protection class	IP67 DIN EN 60529 - IP6K9K ISO 20653					
Protection class, connector	-					
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					

## Environmental conditions

Attribute	165MSK00K1G	165MSK00K1H	165MSK00K1I	165MSK00K1J	165MSK00K1K	165MSK00K1L ▶
Pollution degree	3					
Protection class	III					
Protection class	IP67 DIN EN 60529 - IP6K9K ISO 20653					
Protection class, connector	-					
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					

## Environmental conditions

Attribute	165MSK00K1H31
Pollution degree	3
Protection class	III
Protection class	IP67 DIN EN 60529 - IP6K9K ISO 20653
Protection class, connector	-
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

## Installation

Attribute	165MSK00H1A	165MSK00H1B	165MSK00H1E	165MSK00H1F	165MSK00H1G	165MSK00H1H ▶
Mounting type	screwed					
Detent present	no					

## Installation

Attribute	165MSK00H1K	165MSK00H1L	165MSK00J1C	165MSK00J1D	165MSK00J1I	165MSK00J1J ▶
Mounting type	screwed					
Detent present	no					



## Installation

Attribute	165MSK00K1A	165MSK00K1B	165MSK00K1C	165MSK00K1D	165MSK00K1E	165MSK00K1F ▶
Mounting type	screwed					
Detent present	no					

## Installation

Attribute	165MSK00K1G	165MSK00K1H	165MSK00K1I	165MSK00K1J	165MSK00K1K	165MSK00K1L ▶
Mounting type	screwed					
Detent present	no					

## Installation

Attribute	165MSK00K1H31
Mounting type	screwed
Detent present	no

## Connection

Attribute	165MSK00H1A	165MSK00H1B	165MSK00H1E	165MSK00H1F	165MSK00H1G	165MSK00H1H ▶
Connector type	M12x1 - 4 polig					
Cable length	0.15 m					
Number of strands	4					
Wire cross section	0.25 mm <sup>2</sup>					

## Connection

Attribute	165MSK00H1K	165MSK00H1L	165MSK00J1C	165MSK00J1D	165MSK00J1I	165MSK00J1J ▶
Connector type	M12x1 - 4 polig		M12x1 - 8 polig			
Cable length	0.15 m					
Number of strands	4		8			
Wire cross section	0.25 mm <sup>2</sup>					

## Connection

Attribute	165MSK00K1A	165MSK00K1B	165MSK00K1C	165MSK00K1D	165MSK00K1E	165MSK00K1F ▶
Connector type	-					
Cable length	1 m					
Number of strands	4		6		4	
Wire cross section	0.25 mm <sup>2</sup>					

## Connection

Attribute	165MSK00K1G	165MSK00K1H	165MSK00K1I	165MSK00K1J	165MSK00K1K	165MSK00K1L ▶
Connector type	-					
Cable length	1 m					
Number of strands	4		6		4	
Wire cross section	0.25 mm <sup>2</sup>					

## Connection

Attribute	165MSK00K1H31
Connector type	-
Cable length	1 m
Number of strands	4
Wire cross section	0.25 mm <sup>2</sup>

## Approvals

Attribute	165MSK00H1A	165MSK00H1B	165MSK00H1E	165MSK00H1F	165MSK00H1G	165MSK00H1H ▶
Certified in accordance with	-	UL	-		UL	
CE label	yes					

## Approvals

Attribute	165MSK00H1K	165MSK00H1L	165MSK00J1C	165MSK00J1D	165MSK00J1I	165MSK00J1J ▶
Certified in accordance with	UL					
CE label	yes					

## Approvals

Attribute	165MSK00K1A	165MSK00K1B	165MSK00K1C	165MSK00K1D	165MSK00K1E	165MSK00K1F ▶
Certified in accordance with	UL					
CE label	yes					

## Approvals

Attribute	165MSK00K1G	165MSK00K1H	165MSK00K1I	165MSK00K1J	165MSK00K1K	165MSK00K1L ▶
Certified in accordance with	UL					
CE label	yes					

## Approvals

Attribute	165MSK00K1H31
Certified in accordance with	UL
CE label	yes

### Operating data

Attribute	165MSK00H1A	165MSK00H1B	165MSK00H1E	165MSK00H1F	165MSK00H1G	165MSK00H1H ▶
Possible actuators	165MBK001					

### Operating data

Attribute	165MSK00H1K	165MSK00H1L	165MSK00J1C	165MSK00J1D	165MSK00J1I	165MSK00J1J ▶
Possible actuators	165MBK001					

### Operating data

Attribute	165MSK00K1A	165MSK00K1B	165MSK00K1C	165MSK00K1D	165MSK00K1E	165MSK00K1F ▶
Possible actuators	165MBK001					

### Operating data

Attribute	165MSK00K1G	165MSK00K1H	165MSK00K1I	165MSK00K1J	165MSK00K1K	165MSK00K1L ▶
Possible actuators	165MBK001					

### Operating data

Attribute	165MSK00K1H31
Possible actuators	165MBK001