



## eloProtect E - Sensor de segurança RFID modelo 165ESK

O sensor de segurança 165ESK eloProtectE utiliza a tecnologia RFID proporcionando ao usuário elevado nível de segurança graças à possibilidade de codificação individual entre sensor e atuador. Como resultado, a proteção contra violação pode ser selecionada de acordo com a aplicação e aumenta a segurança da aplicação.

O uso da tecnologia RFID simplifica a montagem deste sensor devido às tolerâncias maiores de comutação entre sensor e atuador.

O monitoramento direto através da entrada EDM é possível graças à eletrônica de avaliação integrada ao sensor e à alta capacidade de comutação. Devido à alta capacidade de chaveamento das saídas (400mA), um relé de segurança adicional nem sempre é necessário.

Este sensor RFID permite a instalação em série de até 30 sensores.

### Especificação Técnica

- Sinal de saída à cabo ou através de conector M12
- Tipo de contato: OSSD
- LED opcional (3-cores)
- Sinais de saída: 2
- Sinal de saída/diagnóstico: 1
- Sinais de entrada de segurança: 2
- Classe de proteção IP6K9K (ISO 20653)
- Dispositivo autônomo (entrada EDM)
- Design mais compacto disponível no mercado
- Montagem em série de até 30 sensores
- Tempo de resposta mais rápido

## Desenho técnico

IMAGE 1/3

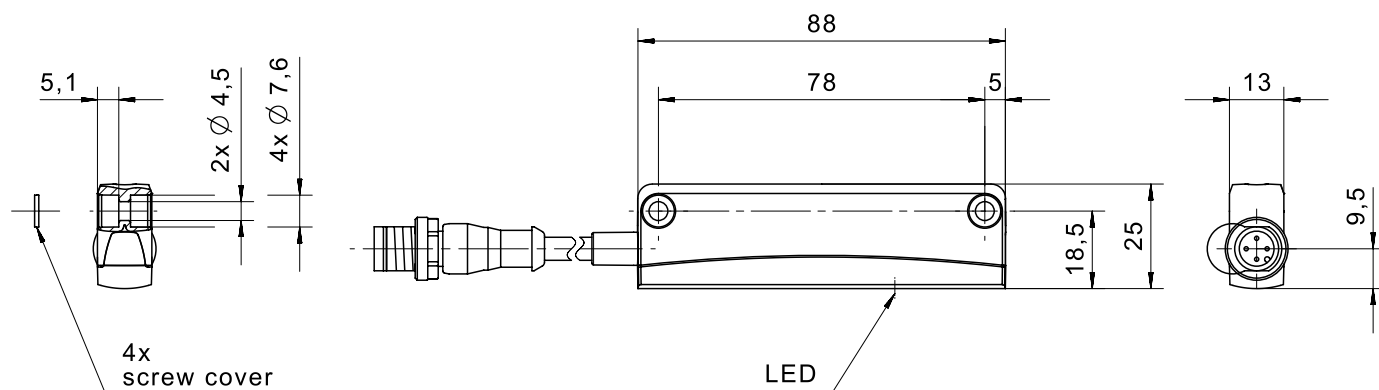
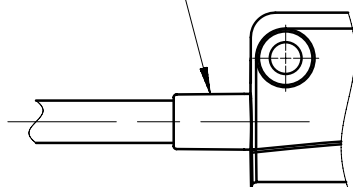


IMAGE 2/3

**grommet**



**male M12**

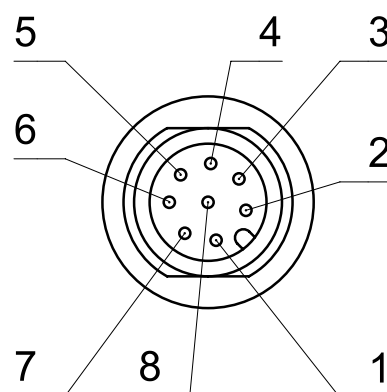
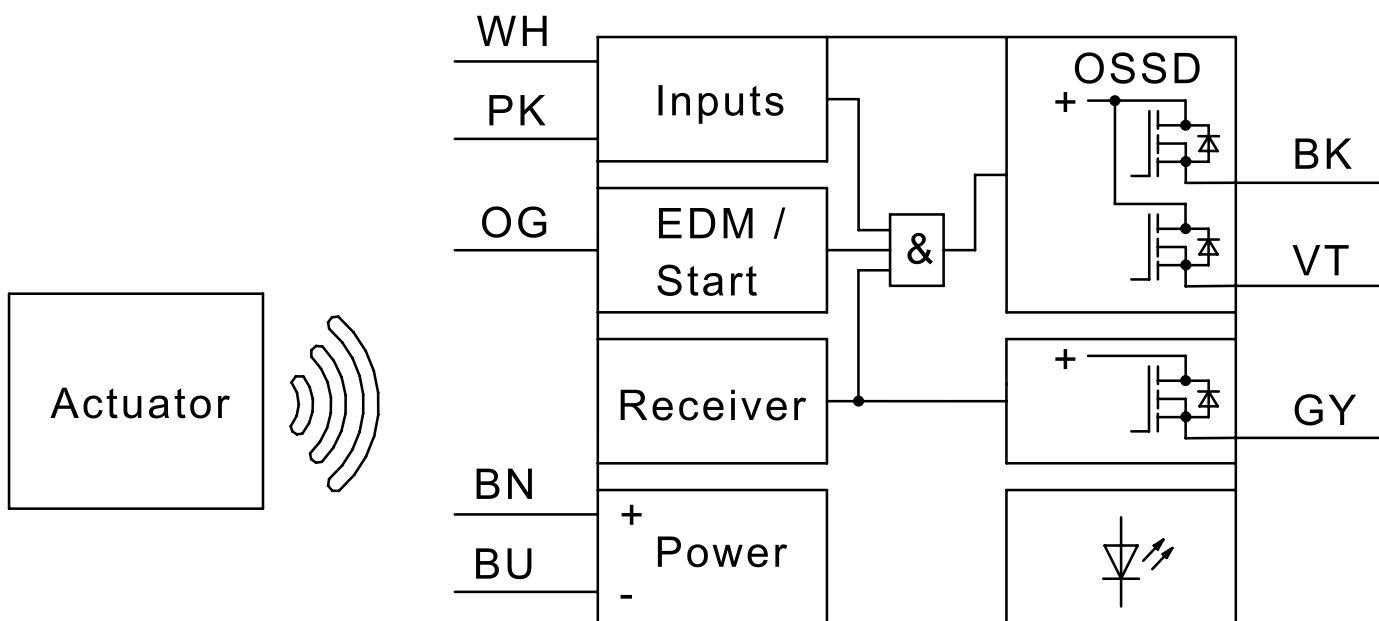
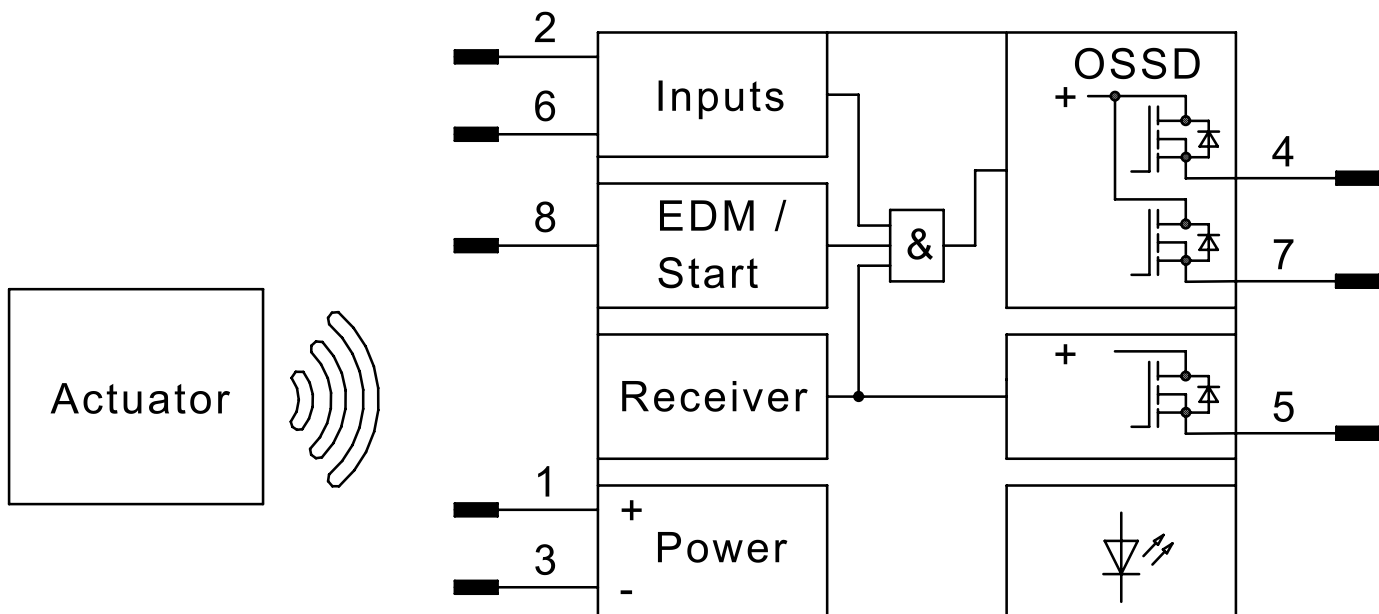
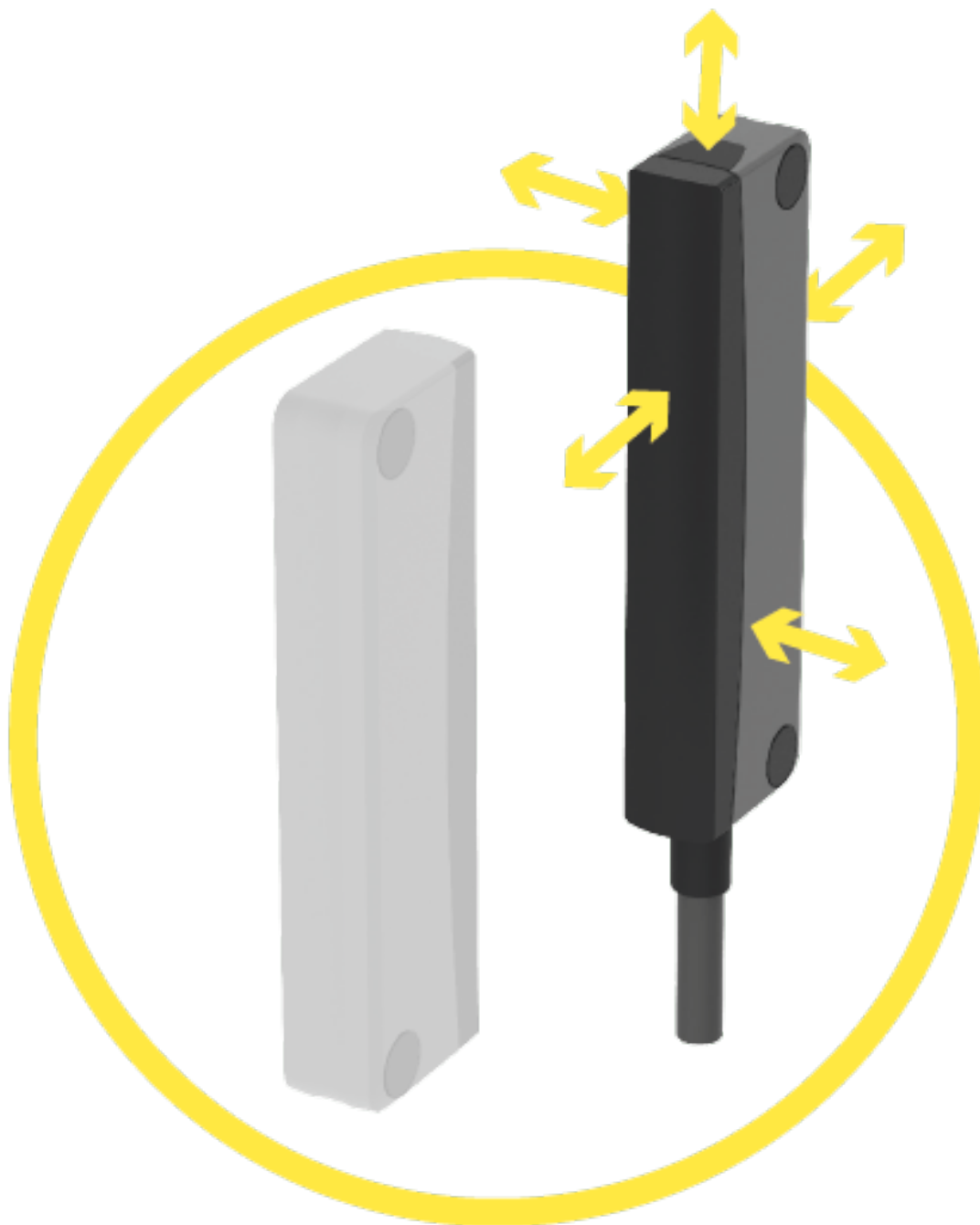


IMAGE 3/3



## Product options

IMAGE 1/2



Suitable for actuation from any direction. Operating distance (Sao) 8 mm. Assured switch-off distance (Sar) 18 mm.

IMAGE 2/2

## ORDERING KEY

165ESK	00					Safety sensor, electronic, RFID
		K				Connection cable – PVC - 1m
		J				Connection pigtail – PVC – M12, 8-pin
			1			Standard-coded
			2			Unique (actuator included with sensor)
			3			Programmable
				1		EDM input automatic
				2		EDM input manual (start push button)
						<b>Other available cable lengths (only with "K" at 9th position)</b>
					-3	3 m
					-5	5 m
					-10	10 m
						Other cable materials, cable lengths and connector types on request

## Características do artigo

Attribute	165ESK00J11	165ESK00J12	165ESK00J21	165ESK00J22	165ESK00J31	165ESK00J32 ▶
Max. switching current at safety output	0.4 A					
Max. switching current at control output	0.05 A					
Contact form	OSSD					
Switching frequency	3 Hz					
Assured switching distance (Sao)	8 mm					
Assured switch-off distance (Sar)	18 mm					
Minimum switching distance (S0 min)	0.5 mm					
Polarity reversal protection	yes					
Number of electronic safety outputs	2					
Number of electronic control outputs	1					
Number of safety inputs	2					
EDM/start input	yes					
Start function	automatic	monitored			automatic	monitored
Utilization category	AC-12 / DC-13					
No-load current I0	30 mA					
Rated operating voltage (Ue)	24 V					
Rated insulation voltage (Ui)	50 V					
Rated impulse withstand voltage (Uimp)	1000 V					
Current consumption per input	2.75 mA					
Power consumption	24 W					
LED display	three-coloured					
Actuation	arbitrary					
Switching principle	electronic					
Hysteresis	2 mm					
wurde angepasst (Number)	30					
Technology	RFID					
Coding variant	coded		unikat		individually coded	

Attribute	165ESK00J11	165ESK00J12	165ESK00J21	165ESK00J22	165ESK00J31	165ESK00J32 ▶
Pollution degree	2					
Rated switching distance (Sn)	12 mm					
Overvoltage category	II					
Active surface (Number)	1					
Turn-on delay (ton)	75 ms					
Readiness delay (tv)	1000 ms					
Voltage drop (Ud)	0.75 V					
Stabilised PELV/SELV power supply	required					
Fuse operating voltage	1A fast					
Internal electronic fuse	yes					
Short-circuit detection	yes					
Cross-short detection	yes					
PL acc. to EN ISO 13849-1	e					
SIL acc. to IEC 61508	3					
SIL CL acc. to IEC 62061	3					
PFHD according to IEC 61508	2,24x10 <sup>-9</sup> 1/h					
Category acc. to EN ISO 13849-1	4					
Coding acc. to EN ISO 14119	Low		High			
Type acc. to EN ISO 14119	4					
Mission time in years	20 a					
Structure acc. to EN ISO 13849-1	Two-channel					
Hardware fault tolerance (HFT) according to IEC 61508	1					
Housing design	rectangular					
Dimensions	25 x 88 x 13 mm					
Free zone	50 mm					
Actuation frequency	180 1/h					
Minimum installation distance (between two sensors)	150 mm					
cannot be mounted flush	yes					
Housing material	PBT, PC					

Attribute	165ESK00J11	165ESK00J12	165ESK00J21	165ESK00J22	165ESK00J31	165ESK00J32 ▶
Cable material	PVC					
Housing colour	grau, schwarz					
Protection class, connector	IP67 / IP69K DIN EN 60529					
Operating temperature min.	-25 °C					
Max. operating temperature	70 °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)	30 g / 11 ms					
Vibration resistance (Norm)	10 ... 55 Hz					
Protection class, housing	IP67 DIN EN 60529 - IP6K9K ISO 20653					
Min. storage temperature	-25 °C					
Max. storage temperature	70 °C					
Continuous shock resistance (Norm)	10 g / 16 ms					
Relative humidity	5 - 85 %					
Air pressure	860 - 1060 hPa					
Delta tmax	0.5 °C/min					
Mounting type	screwed					
Weight	70 g					
Torque for fastening screws	0.7 N m					
Connector type	M12x1 - 8 polig					
Cable type	LiYY					
Cable length	0.15 m					
Number of strands	8					
Wire cross section	0.25 mm²					
Cable colour	grau					
Certified in accordance with	EN ISO 13849-1 IEC 61508 IEC 62061 EN 60947- 5-3 UL 508 / CSA 22.17	EN ISO 13849-1 IEC 61508 IEC 62061 EN 60947- 5-3 UL 508 / CSA 22.19	EN ISO 13849-1 IEC 61508 IEC 62061 EN 60947- 5-3 UL 508 / CSA 22.21	EN ISO 13849-1 IEC 61508 IEC 62061 EN 60947- 5-3 UL 508 / CSA 22.23	EN ISO 13849-1 IEC 61508 IEC 62061 EN 60947- 5-3 UL 508 / CSA 22.25	EN ISO 13849-1 IEC 61508 IEC 62061 EN 60947- 5-3 UL 508 / CSA 22.27



Attribute	165ESK00J11	165ESK00J12	165ESK00J21	165ESK00J22	165ESK00J31	165ESK00J32 ▶
CE label	yes					
Possible actuators	165EBK001					

Attribute	165ESK00K11	165ESK00K12	165ESK00K21	165ESK00K22	165ESK00K31	165ESK00K32
Max. switching current at safety output	0.4 A					
Max. switching current at control output	0.05 A					
Contact form	OSSD					
Switching frequency	3 Hz					
Assured switching distance (Sao)	8 mm					
Assured switch-off distance (Sar)	18 mm					
Minimum switching distance (S0 min)	0.5 mm					
Polarity reversal protection	yes					
Number of electronic safety outputs	2					
Number of electronic control outputs	1					
Number of safety inputs	2					
EDM/start input	yes					
Start function	automatic	monitored	automatic	monitored	automatic	monitored
Utilization category	AC-12 / DC-13					
No-load current I0	30 mA					
Rated operating voltage (Ue)	24 V					
Rated insulation voltage (Ui)	50 V					
Rated impulse withstand voltage (Uimp)	1000 V					
Current consumption per input	2.75 mA					
Power consumption	24 W					
LED display	three-coloured					
Actuation	arbitrary					
Switching principle	electronic					
Hysteresis	2 mm					
wurde angepasst (Number)	30					
Technology	RFID					
Coding variant	coded		unikat		individually coded	
Pollution degree	2					
Rated switching distance (Sn)	12 mm					

Attribute	165ESK00K11	165ESK00K12	165ESK00K21	165ESK00K22	165ESK00K31	165ESK00K32
Overvoltage category	II					
Active surface (Number)	1					
Turn-on delay (ton)	75 ms					
Readiness delay (tv)	1000 ms					
Voltage drop (Ud)	0.75 V					
Stabilised PELV/SELV power supply	required					
Fuse operating voltage	1A fast					
Internal electronic fuse	yes					
Short-circuit detection	yes					
Cross-short detection	yes					
PL acc. to EN ISO 13849-1	e					
SIL acc. to IEC 61508	3					
SIL CL acc. to IEC 62061	3					
PFHD according to IEC 61508	2,24x10 <sup>-9</sup> 1/h					
Category acc. to EN ISO 13849-1	4					
Coding acc. to EN ISO 14119	Low		High			
Type acc. to EN ISO 14119	4					
Mission time in years	20 a					
Structure acc. to EN ISO 13849-1	Two-channel					
Hardware fault tolerance (HFT) according to IEC 61508	1					
Housing design	rectangular					
Dimensions	25 x 88 x 13 mm					
Free zone	50 mm					
Actuation frequency	180 1/h					
Minimum installation distance (between two sensors)	150 mm					
cannot be mounted flush	yes					
Housing material	PBT, PC					
Cable material	PVC					
Housing colour	grau, schwarz					
Protection class, connector	-					
Operating temperature min.	-25 °C					

Attribute	165ESK00K11	165ESK00K12	165ESK00K21	165ESK00K22	165ESK00K31	165ESK00K32
Max. operating temperature	70 °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)	30 g / 11 ms					
Vibration resistance (Norm)	10 ... 55 Hz					
Protection class, housing	IP67 DIN EN 60529 - IP6K9K ISO 20653					
Min. storage temperature	-25 °C					
Max. storage temperature	70 °C					
Continuous shock resistance (Norm)	10 g / 16 ms					
Relative humidity	5 - 85 %					
Air pressure	860 - 1060 hPa					
Delta tmax	0.5 °C/min					
Mounting type	screwed					
Weight	100 g					
Torque for fastening screws	0.7 N m					
Connector type	-					
Cable type	LiYY					
Cable length	1 m					
Number of strands	8					
Wire cross section	0.25 mm²					
Cable colour	grau					
Certified in accordance with	EN ISO 13849-1 IEC 61508 IEC 62061 EN 60947- 5-3 UL 508 / CSA 22.16	EN ISO 13849-1 IEC 61508 IEC 62061 EN 60947- 5-3 UL 508 / CSA 22.18	EN ISO 13849-1 IEC 61508 IEC 62061 EN 60947- 5-3 UL 508 / CSA 22.20	EN ISO 13849-1 IEC 61508 IEC 62061 EN 60947- 5-3 UL 508 / CSA 22.22	EN ISO 13849-1 IEC 61508 IEC 62061 EN 60947- 5-3 UL 508 / CSA 22.24	EN ISO 13849-1 IEC 61508 IEC 62061 EN 60947- 5-3 UL 508 / CSA 22.26
CE label	yes					
Possible actuators	165EBK001					