

Safety sensor 117... plastic housing

The safety sensor with built-in relay 117K monitors guard doors and protective covers on machines and systems to protect personnel.

The combination of safety sensor and safety control electronics in one housing, saves a great deal of space since no additional safety control device is necessary in the switch cabinet. This is a space-saving and cost effective solution, particularly for small machines and systems.

Technical specifications

- Variants for applications with operating voltage 24 V AC/DC and 230 V AC
- Flexible installation possibilities owing to various actuation options
- Variable connection owing to cable outlet and M12 housing connector
- LED display and control contact for simple diagnosis

Technical drawing

IMAGE 1/3

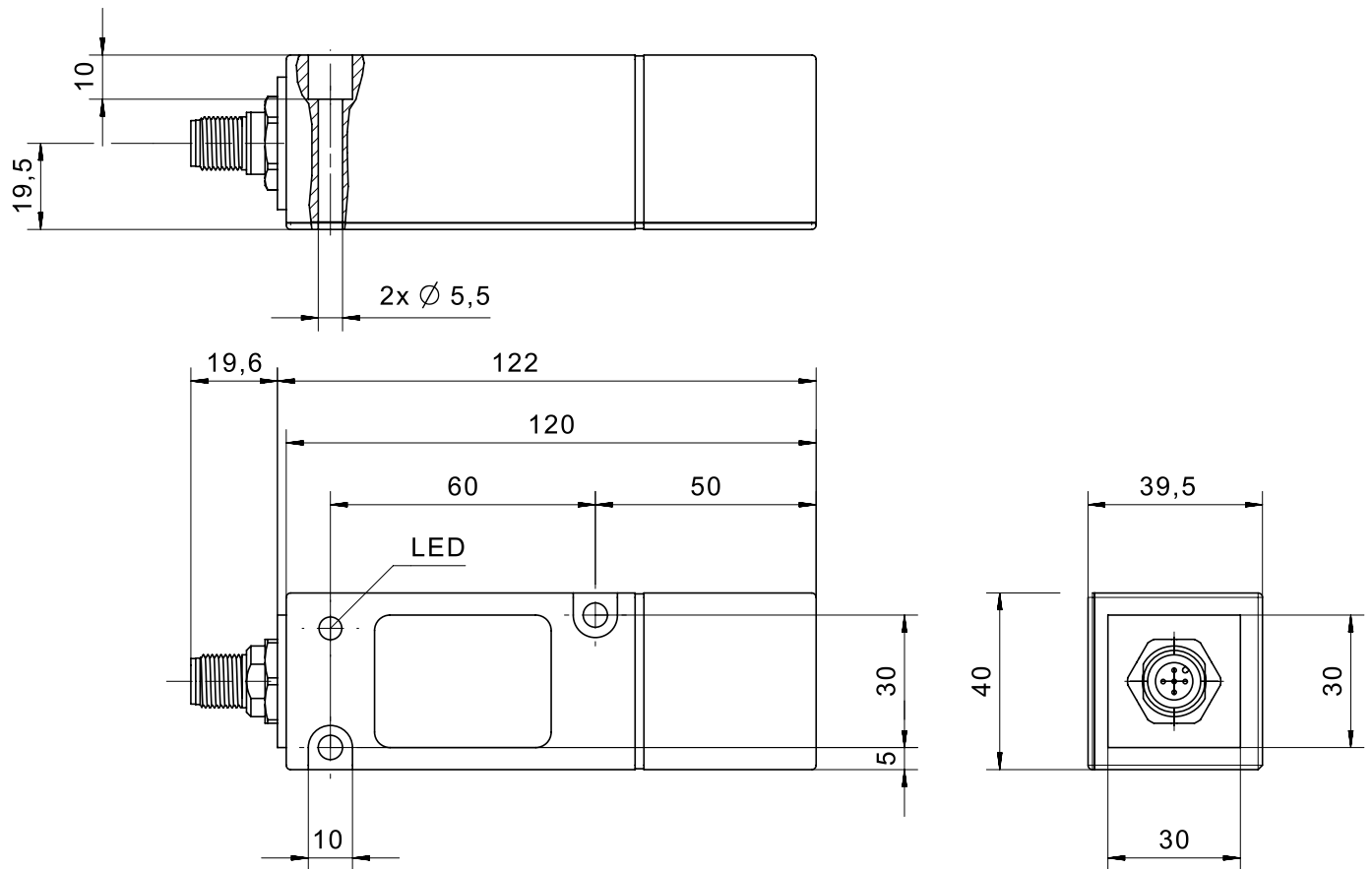
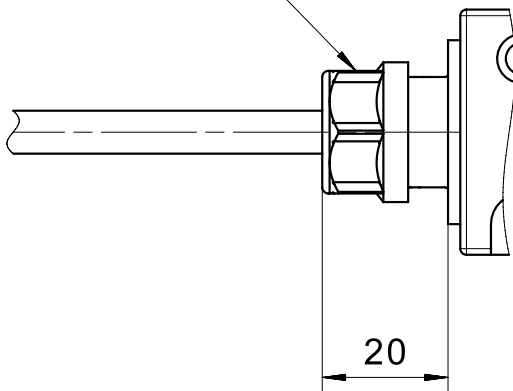


IMAGE 2/3

cable gland



male M12

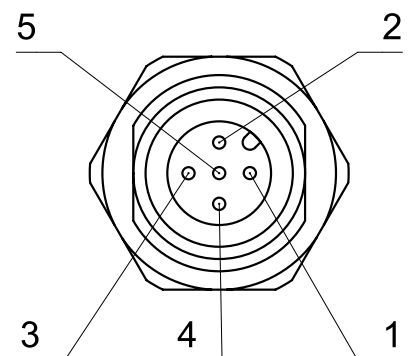
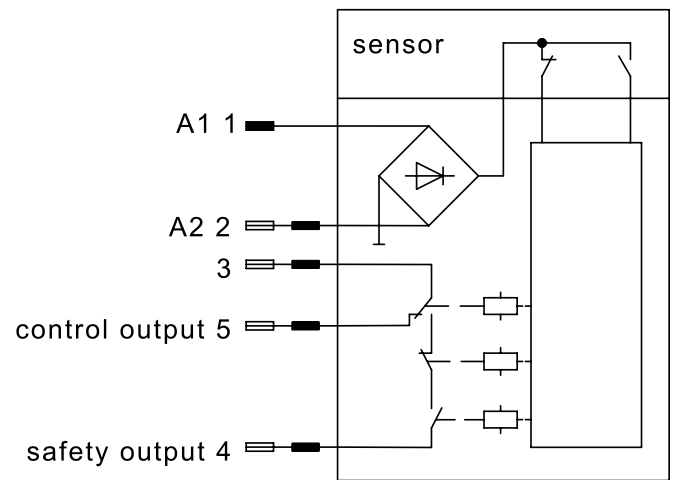
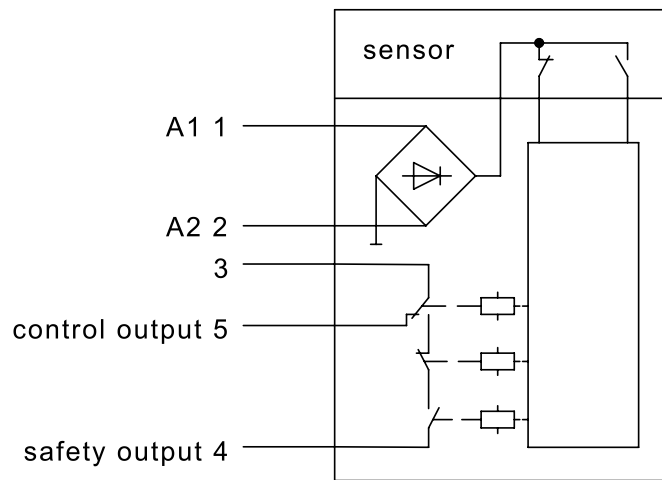
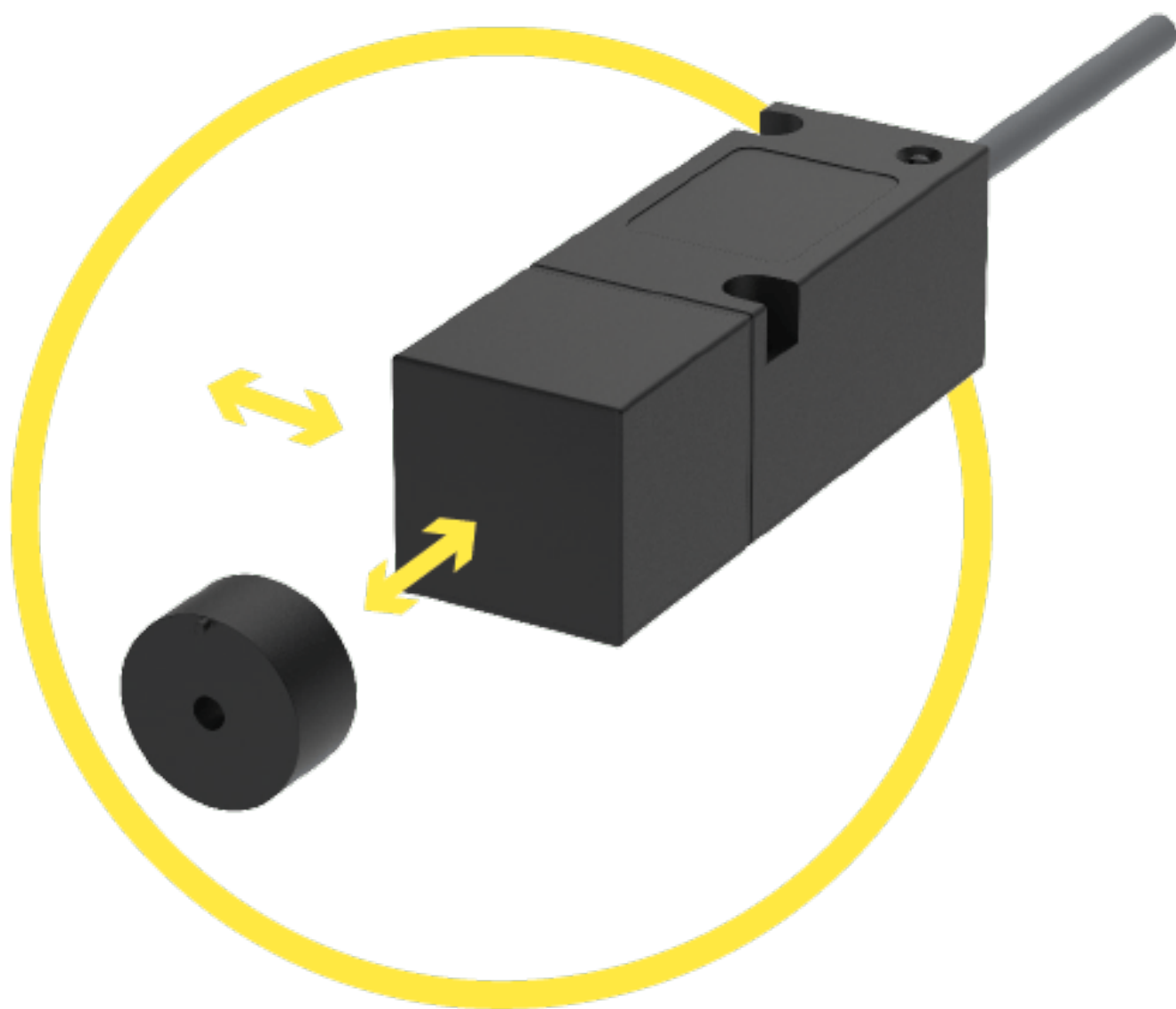


IMAGE 3/3



Product options

IMAGE 1/3



Variants for front and side actuation. Operating distance (Sao) from 7 to 10 mm Assured switch-off distance (Sar) from 18 to 21 mm.

IMAGE 2/3

ORDERING KEY

	117411E1	117411H1	117414E1	117511E1	117511H1	117514E1
Cubic plastic housing	X	X	X	X	X	X
M12x1 connector, 5-pin, plastic	-	-	-	-	-	-
Connection cable 1m*	X	X	X	X	X	X
S0 safety output, single-channel	X	X	X	X	X	X
N.C. control output (changeover contact with S0)	X	X	X	X	X	X
Operating voltage 230 V AC	-	-	X	-	-	X
Operating voltage 24 V AC/DC	X	X	-	X	X	-
Actuation direction lateral right	X	X	X	-	-	-
Actuation direction lateral left	-	-	-	X	X	X
Actuation direction front	-	-	-	-	-	-
Actuation direction top	-	-	-	-	-	-
PLd (EN ISO 13849-1)	X	-	X	X	-	X
PLe (EN ISO 13849-1)	-	X	-	-	X	-

	117611H1	117614E1	117711E1	117711H1	117714E1
Cubic plastic housing	X	X	X	X	X
M12x1 connector, 5-pin, plastic	-	-	-	-	-
Connection cable 1m*	X	X	X	X	X
S0 safety output, single-channel	X	X	X	X	X
N.C. control output (changeover contact with S0)	X	X	X	X	X
Operating voltage 230 V AC	-	X	-	-	X
Operating voltage 24 V AC/DC	X	-	X	X	-
Actuation direction lateral right	-	-	-	-	-
Actuation direction lateral left	-	-	-	-	-
Actuation direction front	X	X	-	-	-
Actuation direction top	-	-	X	X	X
PLd (EN ISO 13849-1)	-	X	X	-	X
PLe (EN ISO 13849-1)	X	-	-	X	-

IMAGE 3/3

MATCHING ACTUATORS

Actuators	117...		
	$S_{0_{\min}}$	S_{ao}	S_{ar}
304 200 00	0.5	2.5	18.5
304 200 00 V	0.5	2.5	18.5
304 200 00 H	0.5	2.5	18.5
304 200 00 S	0.5	6	23.5
304 200 00 VS	0.5	6	23.5
304 200 00 SH	0.5	6	23.5
304 271 02	0.5	3	21
304 271 80	0.5	5	21.5
304 271 82	0.5	9	30

$S_{0_{\min}}$ = minimum switching distance (mm), S_{ao} = operating distance (mm), S_{ar} = assured switch-off distance (mm)

Article characteristics

Attribute	117511E1	117511H1	117514E1	117611H1	117614E1	117711E1 ▶
Max. switching voltage at safety output	30 V DC					
Max. switching voltage at control output	30 V DC					
Max. switching voltage at safety output	250 V AC					
Max. switching voltage at control output	250 V AC					
Max. switching current at safety output	3 A					
Max. switching current at control output	3 A					
Max. switching power at safety output	90 W					
Max. switching power at control output	90 W					
Max. switching power at safety output	750 VA					
Max. switching power at control output	750 VA					
Assured switching distance (Sao)	3 mm					
Assured switch-off distance (Sar)	21 mm					
Minimum switching distance (SO min)	0.5 mm					
Number of relay safety outputs	1					
Number of relay control outputs	1					
Stop category 0 (STO) nach IEC 61800-5-2	yes					
Stop category 1 (SS1) nach IEC 61800-5-2	no					
EDM/start input	no					
Utilization category	AC-15 / DC-13					
Operating voltage min.	21.6 V DC	–	–	21.6 V DC	–	21.6 V DC
Operating voltage max.	26.4 V DC	–	–	26.4 V DC	–	26.4 V DC
Operating voltage min.	21.6 V AC	207 V AC	207 V AC	21.6 V AC	207 V AC	21.6 V AC

Attribute	117511E1	117511H1	117514E1	117611H1	117614E1	117711E1 ▶
Operating voltage max.	26.4 V AC		253 V AC	26.4 V AC	253 V AC	26.4 V AC
Current consumption	60 mA	100 mA				60 mA
Power consumption	1.5 W	2.4 W	–	2.4 W	–	1.5 W
Power consumption	1.5 VA	2.4 VA	23 VA	2.4 VA	23 VA	1.5 VA
LED display	single-coloured					
Switching principle	magnetic					
Technology	Reed					
Min. switching voltage at safety output	5 V DC	10 V DC	5 V DC	10 V DC	5 V DC	
Min. switching voltage at control output	12 V DC	10 V DC	12 V DC	10 V DC	12 V DC	
Min. switching voltage at safety output	–	10 V AC	–	10 V AC	–	
Min. switching voltage at control output	12 V AC	10 V AC	12 V AC	10 V AC	12 V AC	
Min. switching current at safety output	0.1 A	0.01 A	0.1 A	0.01 A	0.1 A	
Min. switching current at control output	0.01 A					
Min. switching power at safety output	0.5 W	3 W	0.5 W	3 W	0.5 W	
Min. switching power at control output	0.12 W	3 W	0.12 W	3 W	0.12 W	
Min. switching power at safety output	–	3 VA	–	3 VA	–	
Min. switching power at control output	0.12 VA	3 VA	0.12 VA	3 VA	0.12 VA	
Readiness delay (tv)	350 ms					
Max no operating cycles at 0.5A switching current (ohmic load)	1000000	700000	1000000	700000	1000000	
Max no operating cycles at 2.5A switching current (ohmic load)	230000	25000	230000	25000	230000	
Overvoltage category	III					
Pollution degree	2					
Protection class	III					
Fuse operating voltage	0,5A fast					
Fuse safety output	3A fast					

Attribute	117511E1	117511H1	117514E1	117611H1	117614E1	117711E1 ▶
Fuse control output	3A fast					
Actuation	left side			front		top
PL acc. to EN ISO 13849-1	d	e	d	e	d	
Category acc. to EN ISO 13849-1	3	4	3	4	3	
Coding acc. to EN ISO 14119	Low					
Type acc. to EN ISO 14119	4					
Mission time in years	20 a					
Housing design	rectangular					
Dimensions	120 x 40 x 40 mm					
Operating speed max.	0.1 m/min					
Actuation frequency	18000 1/h					
Free zone	25 mm					
Minimum installation distance (between two sensors)	50 mm					
cannot be mounted flush	yes					
Housing material	PBT					
Cable material	TPE					
Housing colour	schwarz					
Protection class	IP67 DIN EN 60529					
Protection class, connector	-					
Operating temperature min.	-25 °C					
Max. operating temperature	55 °C					
Min. cable temperature range, moving	-25 °C					
Max. cable temperature range, moving	55 °C					
Min. cable temperature range, fixed installation	-25 °C					
Max. cable temperature range, fixed installation	55 °C					
Min. storage temperature	-25 °C					
Max. storage temperature	55 °C					
Shock resistance (Norm)	30 g / 11 ms					

Attribute	117511E1	117511H1	117514E1	117611H1	117614E1	117711E1 ▶
Continuous shock resistance (Norm)	10 g / 16 ms					
Vibration resistance (Norm)	10 ... 55 Hz					
Relative humidity	5 - 85 %					
Air pressure	860 - 1060 hPa					
Delta tmax	0.5 °C/min					
Mounting type	screwed					
Weight	500 g					
Possible actuators	30427102					
Cable length	1 m					
Number of strands	5					
Wire cross section	0.75 mm²					
Connector type	-					
Cable colour	silbergrau					
Certified in accordance with	EN ISO 13849-1 UL 508 / CSA 22.2					
CE label	yes					

Attribute	117711H1	117714E1	117611E1	117631H1	ED117511E1	ED117511H1 ▶
Max. switching voltage at safety output	30 V DC				-	
Max. switching voltage at control output	30 V DC				-	
Max. switching voltage at safety output	250 V AC			30 V AC	-	
Max. switching voltage at control output	250 V AC			30 V AC	-	
Max. switching current at safety output	3 A				-	
Max. switching current at control output	3 A				-	
Max. switching power at safety output	90 W				-	
Max. switching power at control output	90 W				-	
Max. switching power at safety output	750 VA			90 VA	-	
Max. switching power at control output	750 VA			90 VA	-	
Assured switching distance (Sao)	3 mm				-	
Assured switch-off distance (Sar)	21 mm				-	
Minimum switching distance (S0 min)	0.5 mm				-	
Number of relay safety outputs	1				-	
Number of relay control outputs	1				-	
Stop category 0 (STO) nach IEC 61800-5-2	yes				-	
Stop category 1 (SS1) nach IEC 61800-5-2	no				-	
EDM/start input	no				-	
Utilization category	AC-15 / DC-13				-	
Operating voltage min.	21.6 V DC	-	21.6 V DC		-	
Operating voltage max.	26.4 V DC	-	26.4 V DC		-	
Operating voltage min.	21.6 V AC	207 V AC	21.6 V AC		-	
Operating voltage max.	26.4 V AC	253 V AC	26.4 V AC		-	

Attribute	117711H1	117714E1	117611E1	117631H1	ED117511E1	ED117511H1 ▶
Current consumption	100 mA		60 mA	100 mA	-	
Power consumption	2.4 W	-	1.5 W	2.4 W	-	
Power consumption	2.4 VA	23 VA	1.5 VA	2.4 VA	-	
LED display	single-coloured				-	
Switching principle	magnetic				-	
Technology	Reed				-	
Min. switching voltage at safety output	10 V DC	5 V DC		10 V DC	-	
Min. switching voltage at control output	10 V DC	12 V DC		10 V DC	-	
Min. switching voltage at safety output	10 V AC	-		10 V AC	-	
Min. switching voltage at control output	10 V AC	12 V AC		10 V AC	-	
Min. switching current at safety output	0.01 A	0.1 A		0.01 A	-	
Min. switching current at control output	0.01 A				-	
Min. switching power at safety output	3 W	0.5 W		3 W	-	
Min. switching power at control output	3 W	0.12 W		3 W	-	
Min. switching power at safety output	3 VA	-		3 VA	-	
Min. switching power at control output	3 VA	0.12 VA		3 VA	-	
Readiness delay (tv)	350 ms				-	
Max no operating cycles at 0.5A switching current (ohmic load)	700000	1000000		700000	-	
Max no operating cycles at 2.5A switching current (ohmic load)	25000	230000		25000	-	
Overvoltage category	III				-	
Pollution degree	2				-	
Protection class	III				-	
Fuse operating voltage	0,5A fast				-	
Fuse safety output	3A fast				-	
Fuse control output	3A fast				-	

Attribute	117711H1	117714E1	117611E1	117631H1	ED117511E1	ED117511H1 ▶
Actuation	top		front		-	
PL acc. to EN ISO 13849-1	e	d		e	-	
Category acc. to EN ISO 13849-1	4	3		4	-	
Coding acc. to EN ISO 14119	Low				-	
Type acc. to EN ISO 14119	4				-	
Mission time in years	20 a				-	
Housing design	rectangular				-	
Dimensions	120 x 40 x 40 mm				-	
Operating speed max.	0.1 m/min				-	
Actuation frequency	18000 1/h				-	
Free zone	25 mm				-	
Minimum installation distance (between two sensors)	50 mm				-	
cannot be mounted flush	yes				-	
Housing material	PBT				-	
Cable material	TPE			-		
Housing colour	schwarz				-	
Protection class	IP67 DIN EN 60529				-	
Protection class, connector	-			IP67 DIN EN 60529	-	
Operating temperature min.	-25 °C				-	
Max. operating temperature	55 °C				-	
Min. cable temperature range, moving	-25 °C			-		
Max. cable temperature range, moving	55 °C			-		
Min. cable temperature range, fixed installation	-25 °C			-		
Max. cable temperature range, fixed installation	55 °C			-		
Min. storage temperature	-25 °C				-	
Max. storage temperature	55 °C				-	
Shock resistance (Norm)	30 g / 11 ms				-	
Continuous shock resistance (Norm)	10 g / 16 ms				-	

Attribute	117711H1	117714E1	117611E1	117631H1	ED117511E1	ED117511H1 ▶
Vibration resistance (Norm)	10 ... 55 Hz				-	
Relative humidity	5 - 85 %				-	
Air pressure	860 - 1060 hPa				-	
Delta tmax	0.5 °C/min				-	
Mounting type	screwed				-	
Weight	500 g				-	
Possible actuators	30427102				-	
Cable length	1 m			-		
Number of strands	5			-		
Wire cross section	0.75 mm²			-		
Connector type	-			M12x1 - 5 polig	-	
Cable colour	silbergrau			-		
Certified in accordance with	EN ISO 13849-1 UL 508 / CSA 22.2				-	
CE label	yes				-	

Attribute	ED117514E1	ED117611E1	ED117611H1	ED117614E1	ED117631H1	ED117711E1 ▶
Max. switching voltage at safety output			-			
Max. switching voltage at control output			-			
Max. switching voltage at safety output			-			
Max. switching voltage at control output			-			
Max. switching current at safety output			-			
Max. switching current at control output			-			
Max. switching power at safety output			-			
Max. switching power at control output			-			
Max. switching power at safety output			-			
Max. switching power at control output			-			
Assured switching distance (Sao)			-			
Assured switch-off distance (Sar)			-			
Minimum switching distance (S0 min)			-			
Number of relay safety outputs			-			
Number of relay control outputs			-			
Stop category 0 (STO) nach IEC 61800-5-2			-			
Stop category 1 (SS1) nach IEC 61800-5-2			-			
EDM/start input			-			
Utilization category			-			
Operating voltage min.			-			
Operating voltage max.			-			
Operating voltage min.			-			
Operating voltage max.			-			

Attribute	ED117514E1	ED117611E1	ED117611H1	ED117614E1	ED117631H1	ED117711E1 ▶
Current consumption			-			
Power consumption			-			
Power consumption			-			
LED display			-			
Switching principle			-			
Technology			-			
Min. switching voltage at safety output			-			
Min. switching voltage at control output			-			
Min. switching voltage at safety output			-			
Min. switching voltage at control output			-			
Min. switching current at safety output			-			
Min. switching current at control output			-			
Min. switching power at safety output			-			
Min. switching power at control output			-			
Min. switching power at safety output			-			
Min. switching power at control output			-			
Readiness delay (tv)			-			
Max no operating cycles at 0.5A switching current (ohmic load)			-			
Max no operating cycles at 2.5A switching current (ohmic load)			-			
Overvoltage category			-			
Pollution degree			-			
Protection class			-			
Fuse operating voltage			-			
Fuse safety output			-			
Fuse control output			-			

Attribute	ED117514E1	ED117611E1	ED117611H1	ED117614E1	ED117631H1	ED117711E1 ▶
Actuation			-			
PL acc. to EN ISO 13849-1			-			
Category acc. to EN ISO 13849-1			-			
Coding acc. to EN ISO 14119			-			
Type acc. to EN ISO 14119			-			
Mission time in years			-			
Housing design			-			
Dimensions			-			
Operating speed max.			-			
Actuation frequency			-			
Free zone			-			
Minimum installation distance (between two sensors)			-			
cannot be mounted flush			-			
Housing material			-			
Cable material			-			
Housing colour			-			
Protection class			-			
Protection class, connector			-			
Operating temperature min.			-			
Max. operating temperature			-			
Min. cable temperature range, moving			-			
Max. cable temperature range, moving			-			
Min. cable temperature range, fixed installation			-			
Max. cable temperature range, fixed installation			-			
Min. storage temperature			-			
Max. storage temperature			-			
Shock resistance (Norm)			-			
Continuous shock resistance (Norm)			-			

Attribute	ED117514E1	ED117611E1	ED117611H1	ED117614E1	ED117631H1	ED117711E1 ▶
Vibration resistance (Norm)			-			
Relative humidity			-			
Air pressure			-			
Delta tmax			-			
Mounting type			-			
Weight			-			
Possible actuators			-			
Cable length			-			
Number of strands			-			
Wire cross section			-			
Connector type			-			
Cable colour			-			
Certified in accordance with			-			
CE label			-			

Attribute	ED117711H1	ED117714E1
Max. switching voltage at safety output	-	-
Max. switching voltage at control output	-	-
Max. switching voltage at safety output	-	-
Max. switching voltage at control output	-	-
Max. switching current at safety output	-	-
Max. switching current at control output	-	-
Max. switching power at safety output	-	-
Max. switching power at control output	-	-
Max. switching power at safety output	-	-
Max. switching power at control output	-	-
Assured switching distance (Sao)	-	-
Assured switch-off distance (Sar)	-	-
Minimum switching distance (S0 min)	-	-
Number of relay safety outputs	-	-
Number of relay control outputs	-	-
Stop category 0 (STO) nach IEC 61800-5-2	-	-
Stop category 1 (SS1) nach IEC 61800-5-2	-	-
EDM/start input	-	-
Utilization category	-	-
Operating voltage min.	-	-
Operating voltage max.	-	-
Operating voltage min.	-	-
Operating voltage max.	-	-
Current consumption	-	-
Power consumption	-	-

Attribute	ED117711H1	ED117714E1
Power consumption	-	-
LED display	-	-
Switching principle	-	-
Technology	-	-
Min. switching voltage at safety output	-	-
Min. switching voltage at control output	-	-
Min. switching voltage at safety output	-	-
Min. switching voltage at control output	-	-
Min. switching current at safety output	-	-
Min. switching current at control output	-	-
Min. switching power at safety output	-	-
Min. switching power at control output	-	-
Min. switching power at safety output	-	-
Min. switching power at control output	-	-
Readiness delay (tv)	-	-
Max no operating cycles at 0.5A switching current (ohmic load)	-	-
Max no operating cycles at 2.5A switching current (ohmic load)	-	-
Overvoltage category	-	-
Pollution degree	-	-
Protection class	-	-
Fuse operating voltage	-	-
Fuse safety output	-	-
Fuse control output	-	-
Actuation	-	-
PL acc. to EN ISO 13849-1	-	-
Category acc. to EN ISO 13849-1	-	-

Attribute	ED117711H1	ED117714E1
Coding acc. to EN ISO 14119	-	-
Type acc. to EN ISO 14119	-	-
Mission time in years	-	-
Housing design	-	-
Dimensions	-	-
Operating speed max.	-	-
Actuation frequency	-	-
Free zone	-	-
Minimum installation distance (between two sensors)	-	-
cannot be mounted flush	-	-
Housing material	-	-
Cable material	-	-
Housing colour	-	-
Protection class	-	-
Protection class, connector	-	-
Operating temperature min.	-	-
Max. operating temperature	-	-
Min. cable temperature range, moving	-	-
Max. cable temperature range, moving	-	-
Min. cable temperature range, fixed installation	-	-
Max. cable temperature range, fixed installation	-	-
Min. storage temperature	-	-
Max. storage temperature	-	-
Shock resistance (Norm)	-	-
Continuous shock resistance (Norm)	-	-
Vibration resistance (Norm)	-	-
Relative humidity	-	-
Air pressure	-	-
Delta tmax	-	-
Mounting type	-	-

Attribute	ED117711H1	ED117714E1
Weight	-	-
Possible actuators	-	-
Cable length	-	-
Number of strands	-	-
Wire cross section	-	-
Connector type	-	-
Cable colour	-	-
Certified in accordance with	-	-
CE label	-	-