

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

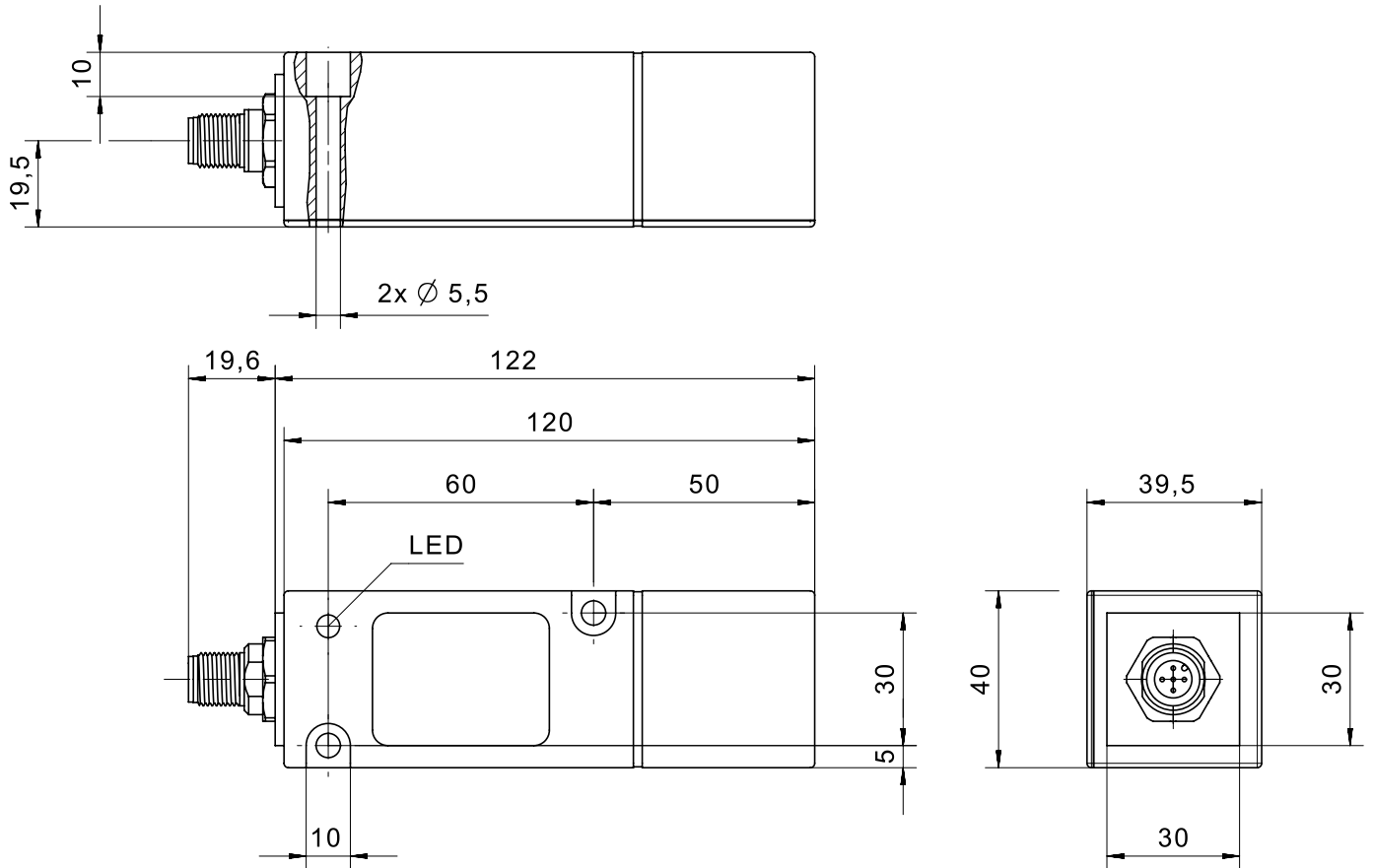
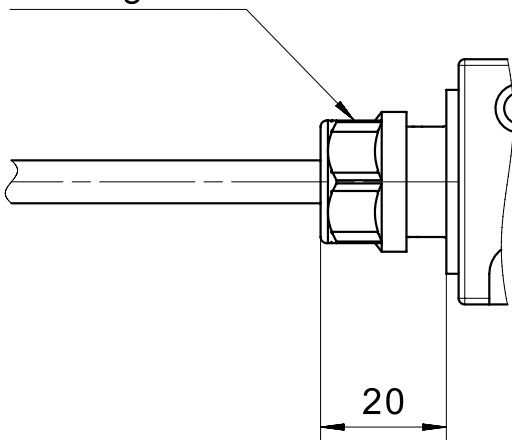


IMAGE 2/3

cable gland



male M12

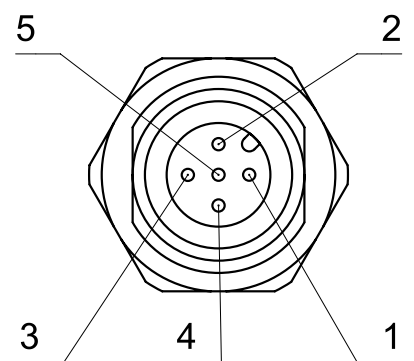
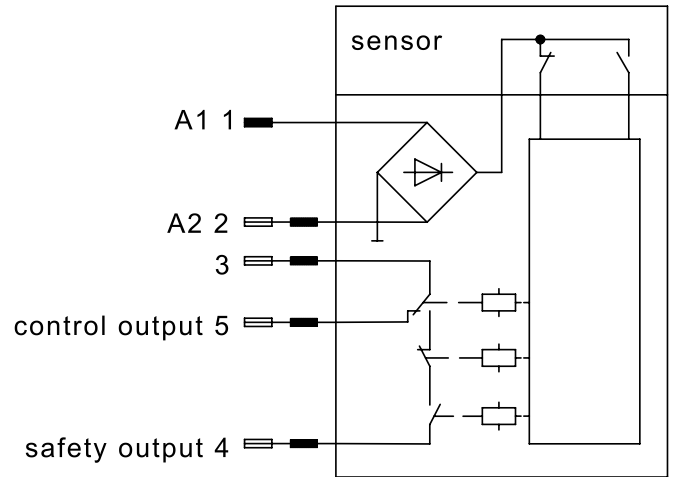
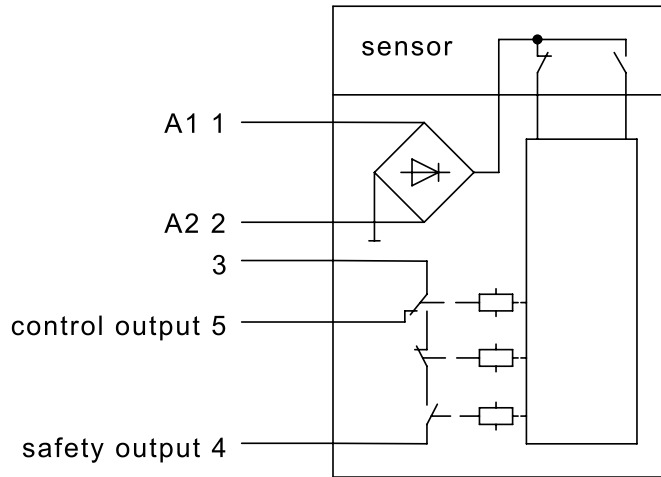
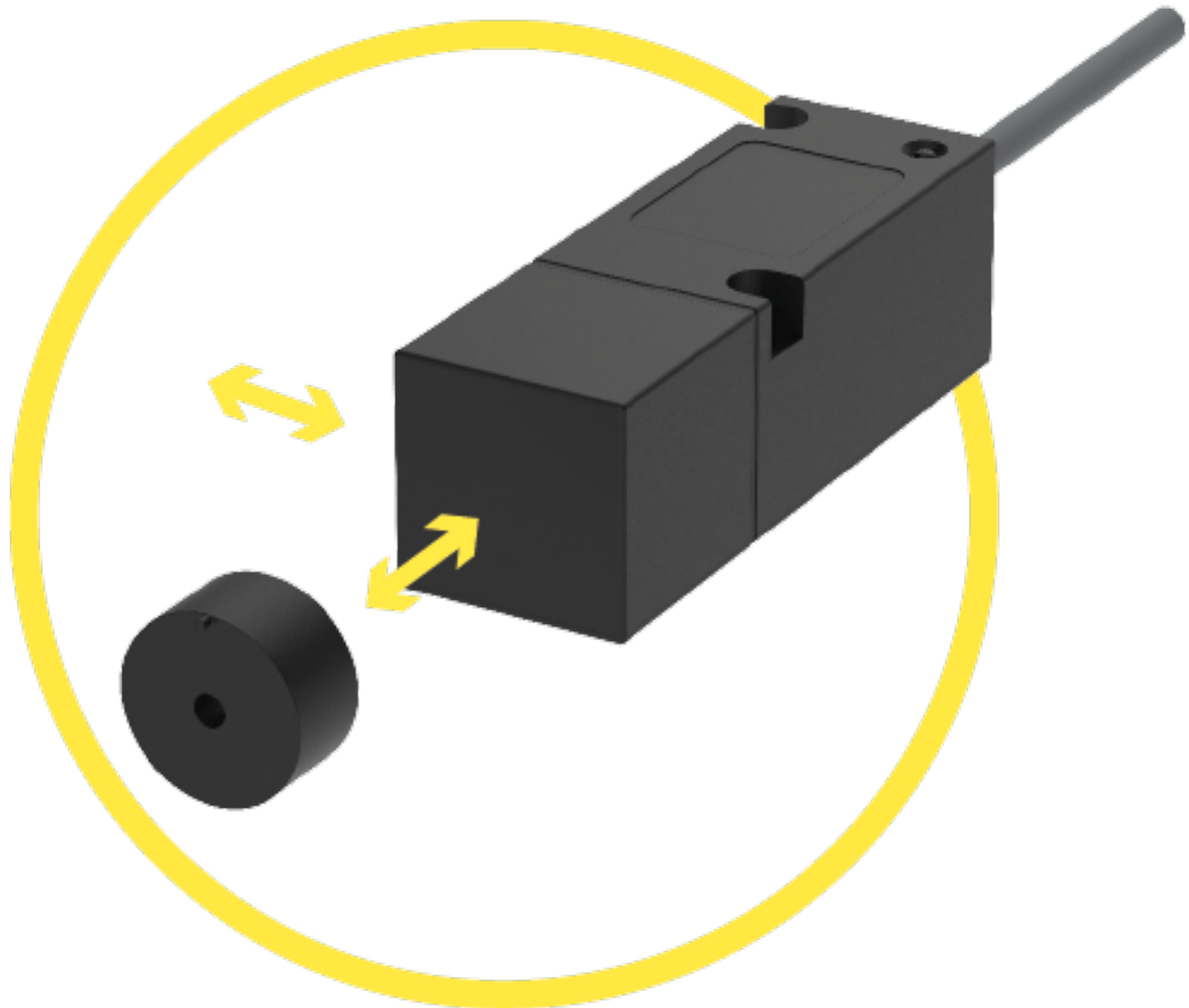


IMAGE 3/3



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
SO safety output, single-channel	X	X	X	X	X	X
N.C. control output (changeover contact with SO)	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
SO safety output, single-channel	X	X	X	X	X
N.C. control output (changeover contact with SO)	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)

Electrical data

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 (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	-	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	21.6 V AC	207 V AC	21.6 V AC

Electrical data

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					

Electrical data

Attribute	117511E1	117511H1	117514E1	117611H1	117614E1	117711E1 ▶
Fuse operating voltage	0,5A fast					
Fuse safety output	3A fast					
Fuse control output	3A fast					
Actuation	left side			front		top

Electrical data

Attribute	117711H1	117714E1	117531H1	117611E1	117631H1
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	250 V AC	30 V AC
Max. switching voltage at control output	250 V AC		30 V AC	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	750 VA	90 VA
Max. switching power at control output	750 VA		90 VA	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	

Electrical data

Attribute	117711H1	117714E1	117531H1	117611E1	117631H1
Operating voltage max.	26.4 V AC	253 V AC		26.4 V AC	
Current consumption		100 mA		60 mA	100 mA
Power consumption	2.4 W	-	2.4 W	1.5 W	2.4 W
Power consumption	2.4 VA	23 VA	2.4 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	5 V DC	10 V DC
Min. switching voltage at control output	10 V DC	12 V DC	10 V DC	12 V DC	10 V DC
Min. switching voltage at safety output	10 V AC	-	10 V AC	-	10 V AC
Min. switching voltage at control output	10 V AC	12 V AC	10 V AC	12 V AC	10 V AC
Min. switching current at safety output	0.01 A	0.1 A	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	0.5 W	3 W
Min. switching power at control output	3 W	0.12 W	3 W	0.12 W	3 W
Min. switching power at safety output	3 VA	-	3 VA	-	3 VA
Min. switching power at control output	3 VA	0.12 VA	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	1000000	700000
Max no operating cycles at 2.5A switching current (ohmic load)	25000	230000	25000	230000	25000
Overvoltage category	III				
Pollution degree	2				
Protection class	III				

Electrical data

Attribute	117711H1	117714E1	117531H1	117611E1	117631H1
Fuse operating voltage	0,5A fast				
Fuse safety output	3A fast				
Fuse control output	3A fast				
Actuation	top		left side	front	

Safety-related characteristics

Attribute	117511E1	117511H1	117514E1	117611H1	117614E1	117711E1 ▶
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					

Safety-related characteristics

Attribute	117711H1	117714E1	117531H1	117611E1	117631H1
PL acc. to EN ISO 13849-1	e	d	e	d	e
Category acc. to EN ISO 13849-1	4	3	4	3	4
Coding acc. to EN ISO 14119	Low				
Type acc. to EN ISO 14119	4				
Mission time in years	20 a				

Mechanical data

Attribute	117511E1	117511H1	117514E1	117611H1	117614E1	117711E1 ▶
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					

Mechanical data

Attribute	117711H1	117714E1	117531H1	117611E1	117631H1
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				

Material information

Attribute	117511E1	117511H1	117514E1	117611H1	117614E1	117711E1 ▶
Housing material	PBT					
Cable material	TPE					
Housing colour	schwarz					

Material information

Attribute	117711H1	117714E1	117531H1	117611E1	117631H1
Housing material	PBT				
Cable material	TPE		-	TPE	-
Housing colour	schwarz				

Environmental conditions

Attribute	117511E1	117511H1	117514E1	117611H1	117614E1	117711E1 ▶
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					
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					

Environmental conditions

Attribute	117711H1	117714E1	117531H1	117611E1	117631H1
Protection class	IP67 DIN EN 60529				
Protection class, connector	-		IP67 DIN EN 60529	-	IP67 DIN EN 60529
Operating temperature min.	-25 °C				
Max. operating temperature	55 °C				
Min. cable temperature range, moving	-25 °C		-	-25 °C	-
Max. cable temperature range, moving	55 °C		-	55 °C	-
Min. cable temperature range, fixed installation	-25 °C		-	-25 °C	-
Max. cable temperature range, fixed installation	55 °C		-	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				
Vibration resistance (Norm)	10 ... 55 Hz				
Relative humidity	5 - 85 %				
Air pressure	860 - 1060 hPa				
Delta tmax	0.5 °C/min				

Installation

Attribute	117511E1	117511H1	117514E1	117611H1	117614E1	117711E1 ▶
Mounting type	screwed					
Weight	500 g					
Possible actuators	30427102					

Installation

Attribute	117711H1	117714E1	117531H1	117611E1	117631H1
Mounting type	screwed				
Weight	500 g				
Possible actuators	30427102				

Connection

Attribute	117511E1	117511H1	117514E1	117611H1	117614E1	117711E1 ▶
Cable length	1 m					
Number of strands	5					
Wire cross section	0.75 mm ²					
Connector type	-					
Cable colour	silbergrau					

Connection

Attribute	117711H1	117714E1	117531H1	117611E1	117631H1
Cable length	1 m		-	1 m	-
Number of strands	5		-	5	-
Wire cross section	0.75 mm ²		-	0.75 mm ²	-
Connector type	-		M12x1 - 5 polig	-	M12x1 - 5 polig
Cable colour	silbergrau		-	silbergrau	-

Approvals

Attribute	117511E1	117511H1	117514E1	117611H1	117614E1	117711E1 ▶
Certified in accordance with	EN ISO 13849-1 UL 508 / CSA 22.2					
CE label	yes					

Approvals

Attribute	117711H1	117714E1	117531H1	117611E1	117631H1
Certified in accordance with	EN ISO 13849-1 UL 508 / CSA 22.2				
CE label	yes				