

Contact elements for emergency stop buttons

Matching contact element for every emergency-stop application: The various functions are combined into the contact elements. The functions can be assigned to the corresponding module which is identifiable by its colour.

Technical specification

- Preassembled contact elements
- Positively driven safety contacts for switching the emergency-stop function
- Signal contact (N.O. contact) for external diagnosis, e.g. display on the machine control unit
- Failure protection module checks permanent connection of push button and contact element
- Illumination module for push buttons, with LED illumination integrated in the anti-obstruction protective collar

Technical drawing

IMAGE 1/10: KE CONTACT ELEMENT WITH 1 N.C. CONTACT

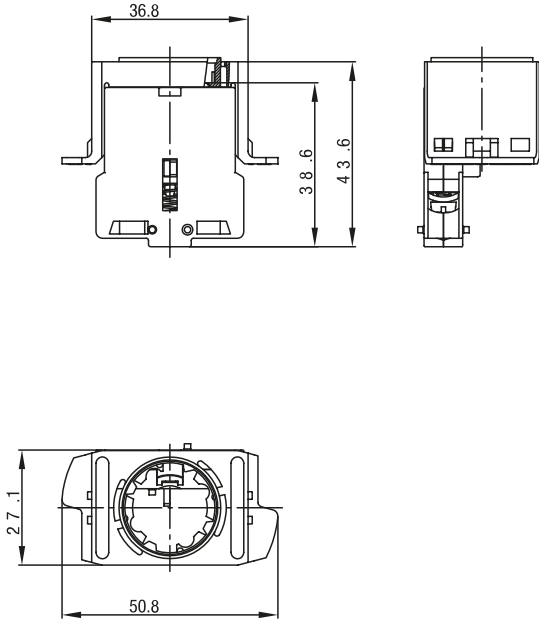


IMAGE 2/10: KE CONTACT ELEMENT WITH 2 N.C. CONTACTS

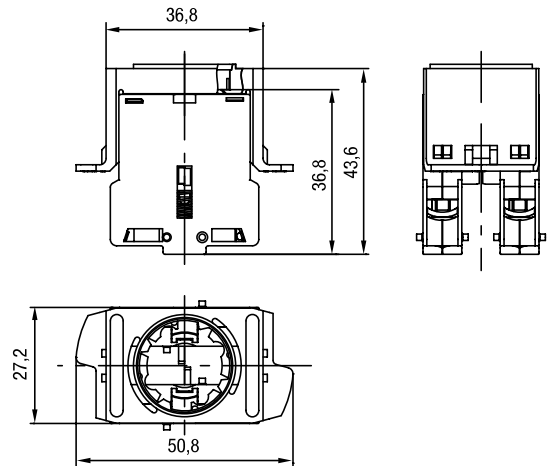


IMAGE 3/10: KE CONTACT ELEMENT WITH 2 N.C. CONTACTS / FAILURE PROTECTION

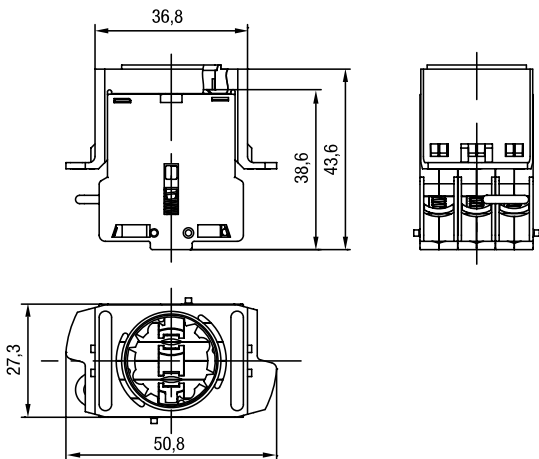


IMAGE 4/10: KE CONTACT ELEMENT WITH 2 N.C. CONTACTS / FAILURE PROTECTION / ILLUMINATION

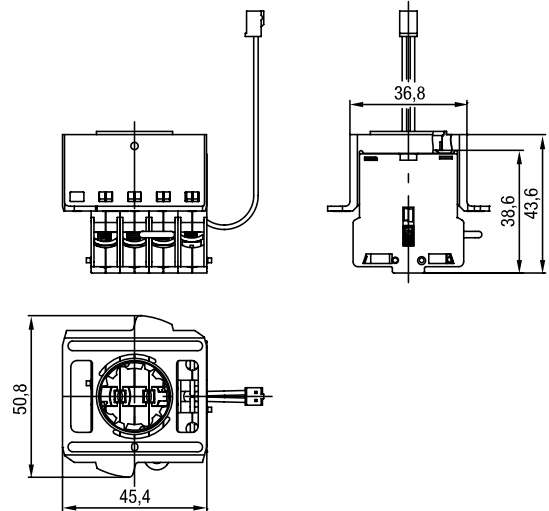


IMAGE 5/10: KE CONTACT ELEMENT WITH 2 N.C. CONTACTS / 1 N.O. CONTACT

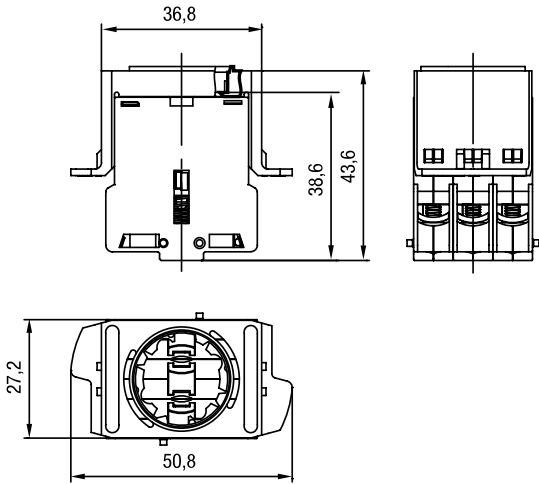


IMAGE 6/10: KE CONTACT ELEMENT WITH 2 N.C. CONTACTS / 1 N.O. CONTACT / FAILURE PROTECTION

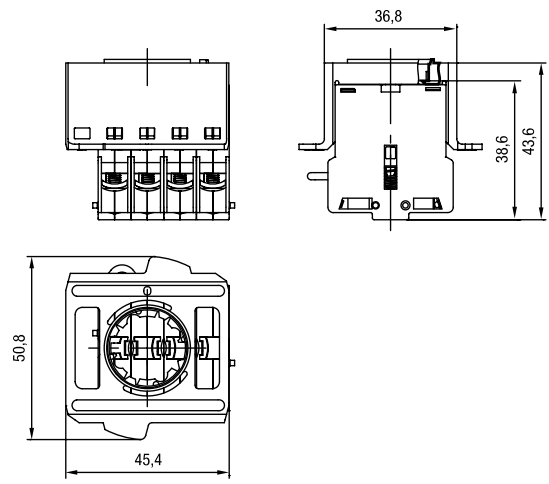


IMAGE 7/10: KE CONTACT ELEMENT WITH 2 N.C. CONTACTS / 1 N.O. CONTACT / FAILURE PROTECTION / ILLUMINATION

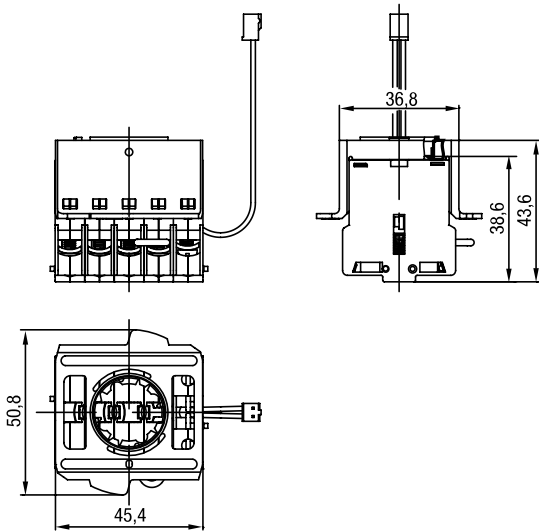


IMAGE 8/10: KE CONTACT ELEMENT WITH 3 N.C. CONTACTS / FAILURE PROTECTION

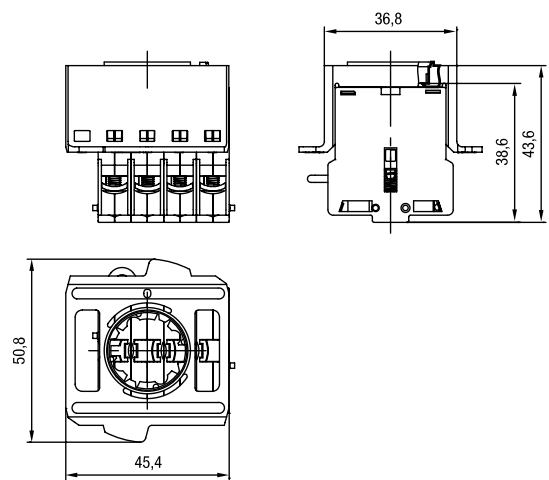


IMAGE 9/10: KE CONTACT ELEMENT WITH 3 N.C. CONTACTS / 1 N.O. CONTACT

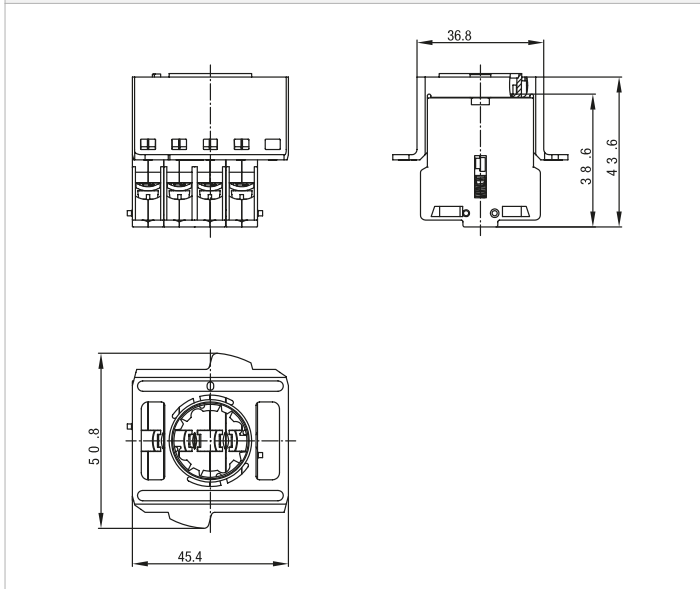
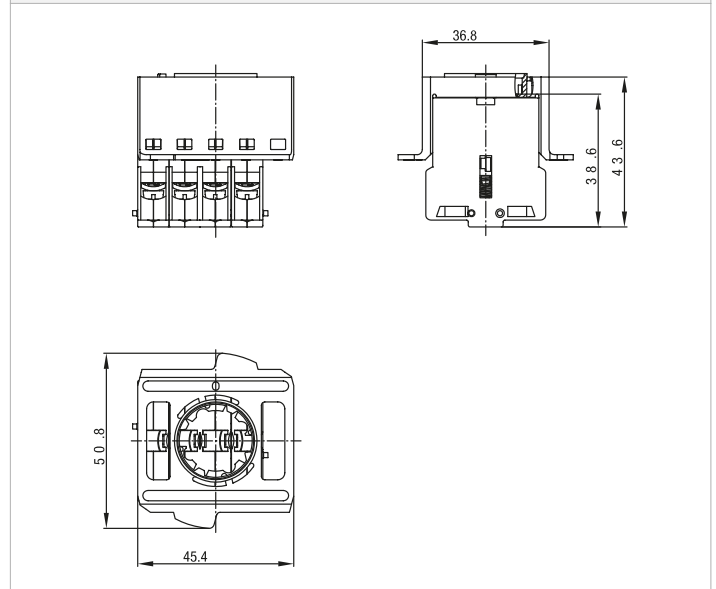


IMAGE 10/10: KE CONTACT ELEMENT WITH 4 N.C. CONTACTS



Electrical data

Attribute	KE10	KE20	KE20SF	KE20SFB	KE21	KE21SF ▶
Min. switching voltage		5 V DC		12 V DC	5 V DC	
Min. switching voltage		5 V AC		12 V AC	5 V AC	
Min. switching current	0.01 A					
Conv. thermal continuous current I _{th}	16 A					
Bounce time	10 ms					
Utilization category	AC15 A600 / DC13 Q600					
Rated operating current (I _e)	3000 / 1600 ; 120 / 200 / 400 / 2000 mA					
Rated operating voltage (U _e)	240 / 440 ; 440 / 250 / 125 / 60 / 24 V					
Rated insulation voltage (U _i)	600 V					
Rated voltage U _e	250 VAC / 440 VAC					
Rated current I _e (ohmic load)	16 A / 10 A					
Rated current I _e (inductive load)	10 A / 6 A					
Protection class	II					
Operating voltage max.	-		30 V DC		-	
Operating voltage max.	-		30 V AC		-	
LED service life	-		100000 (T=25°C, I=20mA)70000 (T=55°C, I=20mA) h		-	
Service life, electrical at nominal load (Cycles)	1000000					
Illumination	No		Yes		No	
Number of safety contacts (positively opening)	1	2				
Number of signalling contacts (N.O.)	0				1	
Failure protection	no		yes		no yes	
Actuation path	6 mm					

Electrical data

Attribute	KE10	KE20	KE20SF	KE20SFB	KE21	KE21SF ▶
Max. switching current		-		0.04 A		-
Max. contact resistance	0.02 Ohm					
Operating voltage min.		-		12 V DC		-
Operating voltage min.		-		12 V AC		-
Max. switching voltage		-		30 V DC		-
Max. switching voltage		-		30 V AC		-

Electrical data

Attribute	KE21SFB	KE30SF	KE31	KE40
Min. switching voltage	12 V DC		5 V DC	
Min. switching voltage	12 V AC		5 V AC	
Min. switching current	0.01 A			
Conv. thermal continuous current I _{th}	16 A			
Bounce time	10 ms			
Utilization category	AC15 A600 / DC13 Q600			
Rated operating current (I _e)	3000 / 1600 120 / 200 / 400 / 2000 mA	3000 / 1600 ; 120 / 200 / 400 / 2000 mA		
Rated operating voltage (U _e)	240 / 440 440 / 250 / 125 / 60 / 24 V	240 / 440 ; 440 / 250 / 125 / 60 / 24 V		
Rated insulation voltage (U _i)	600 V			
Rated voltage U _e	250 VAC / 440 VAC			
Rated current I _e (ohmic load)	16 A / 10 A			
Rated current I _e (inductive load)	10 A / 6 A			
Protection class	III	II		
Operating voltage max.	30 V DC	-		
Operating voltage max.	30 V AC	-		
LED service life	100000 (T=25°C, I=20mA) 70000 (T=55°C, I=20mA) h	-		
Service life, electrical at nominal load (Cycles)	1000000			
Illumination	Yes	No		
Number of safety contacts (positively opening)	2	3	4	
Number of signalling contacts (N.O.)	1	0	1	0
Failure protection	yes		no	

Electrical data

Attribute	KE21SFB	KE30SF	KE31	KE40
Actuation path	6 mm			
Max. switching current	0.04 A	-		
Max. contact resistance	0.02 Ohm			
Operating voltage min.	12 V DC	-		
Operating voltage min.	12 V AC	-		
Max. switching voltage	30 V DC	-		
Max. switching voltage	30 V AC	-		

Safety-related characteristics

Attribute	KE10	KE20	KE20SF	KE20SFB	KE21	KE21SF ▶
B10d acc. to EN ISO 13849-1	180000					

Safety-related characteristics

Attribute	KE21SFB	KE30SF	KE31	KE40
B10d acc. to EN ISO 13849-1	180000			

Mechanical data

Attribute	KE10	KE20	KE20SF	KE20SFB	KE21	KE21SF ▶
Service life, mechanical (Cycles)	1 x 10 ⁶					
Dimensions	43,6 x 50,8 x 27,3 mm (H/B/T)			43,6 x 50,8 x 45,4 mm (H/B/T)	43,6 x 50,8 x 27,3 mm (H/B/T)	43,6 x 50,8 x 45,4 mm (H/B/T)
Positive opening path	3 mm					

Mechanical data

Attribute	KE21SFB	KE30SF	KE31	KE40
Service life, mechanical (Cycles)	1 x 10 ⁶			
Dimensions	43,6 x 50,8 x 45,4 mm (H/B/T)			
Positive opening path	3 mm			

Material information

Attribute	KE10	KE20	KE20SF	KE20SFB	KE21	KE21SF ▶
Contact material	AgNi					

Material information

Attribute	KE21SFB	KE30SF	KE31	KE40
Contact material	AgNi			

Environmental conditions

Attribute	KE10	KE20	KE20SF	KE20SFB	KE21	KE21SF ▶
Operating temperature min.	-30 °C					
Max. operating temperature	85 °C			65 °C	85 °C	
Min. storage temperature	-50 °C					
Max. storage temperature	85 °C					

Environmental conditions

Attribute	KE21SFB	KE30SF	KE31	KE40
Operating temperature min.	-30 °C			
Max. operating temperature	65 °C	85 °C		
Min. storage temperature	-50 °C			
Max. storage temperature	85 °C			

Installation

Attribute	KE10	KE20	KE20SF	KE20SFB	KE21	KE21SF ▶
Mounting type	inserted/latched					
Installation	from below					

Installation

Attribute	KE21SFB	KE30SF	KE31	KE40
Mounting type	inserted/latched			
Installation	from below			

Connection

Attribute	KE10	KE20	KE20SF	KE20SFB	KE21	KE21SF ▶
Connection type	-			10cm Litze und Stecker für Beleuchtung	-	
Screw terminals	yes					
Max. connection cross section	2.5 mm ²					
Wire cross section	-			0.25 mm ²	-	

Connection

Attribute	KE21SFB	KE30SF	KE31	KE40
Connection type	10cm Litze und Stecker für Beleuchtung		-	
Screw terminals	yes			
Max. connection cross section	2.5 mm ²			
Wire cross section	0.25 mm ²		-	

Approvals

Attribute	KE10	KE20	KE20SF	KE20SFB	KE21	KE21SF ▶
Certified in accordance with	EN 60947-5-5 EN 60947-5-1 EN ISO 13850 UL 508 / CSA 22.2					
CE label	yes					

Approvals

Attribute	KE21SFB	KE30SF	KE31	KE40
Certified in accordance with	EN 60947-5-5 EN 60947-5-1 EN ISO 13850 UL 508 / CSA 22.2			
CE label	yes			