

Contactor for capacitors, with series resistors, 33.3 kVAr, 230 V 50 Hz, 240 V 60 Hz



Part no. DILK33-10(230V50HZ,240V60HZ)
 Catalog No. 294054
 Alternate Catalog No. XTCC033D10F

Delivery program

Product range			DILK Contactors for capacitors
Application			Contactors for power factor correction
Description			with series resistors

Rated power of AC-6b three-phase capacitors, 50 - 60 Hz

Open			
230 V	Q	kVAr	20
400 V	Q	kVAr	33.3
525 V	Q	kVAr	40
690 V	Q	kVAr	55
Actuating voltage			230 V 50 Hz, 240 V 60 Hz

Instructions In the case of group compensation multi-stage capacitor banks are connected to the mains, as required. Transient currents of up to $180 \times I_e$ could flow between the capacitors. The capacitors are pre-charged via the early-make auxiliary contacts and the fitted wire resistors, thereby reducing the inrush current. The main contacts then close in a time-delayed manner and bring about the continuous current. Due to their special contacts, the contactors for the capacitors are weld-resistant for capacitors with inrush current peaks. Due to their special contacts, the contactors for capacitors are weld-resistant for capacitors with inrush current peaks up to $180 \times I_e$.

Technical data

General

Standards			IEC/EN 60947
Ambient temperature			
Open		°C	-25 - +60
Enclosed		°C	-25 - 40
Degree of Protection			IP00
Protection against direct contact when actuated from front (EN 50274)			Finger and back-of-hand proof
Altitude		m	Max. 2000
Weight basic unit			
AC operated		kg	1.171
Terminal capacity main cable			
Solid		mm ²	1 x (2.5 - 16)
Flexible with ferrule		mm ²	1 x (2.5 - 35)
Stranded		mm ²	1 x (16 - 50)
Solid or stranded		AWG	12 - 2
Flat conductor	Lamellenzahl x Breite x Dicke	mm	1 x (6 x 9 x 0.8)
Rated impulse withstand voltage	U_{imp}	V AC	6000

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230 V	Q	kVAr	20
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Rated operational current I_e of three-phase capacitors

Open			
230 V	I_e	A	50
400 V	I_e	A	50
525 V	I_e	A	50

690 V	I_e	A	50
of three-phase capacitors enclosed	I_e		
230 V	I_e	A	45
400 V	I_e	A	45
525 V	I_e	A	45
690 V	I_e	A	45
Making capacity (i-peak value) without damping		$\times I_e$	180
Component lifespan	Operations	$\times 10^6$	0.15
Maximum operating frequency		Ops/h	
Max. operating frequency		Ops/h	120

Magnet systems

Voltage tolerance			
AC operated	Pick-up	$\times U_c$	0.8 - 1.15
Drop-out voltage AC operated	Drop-out	$\times U_c$	0.3 - 0.6
Power consumption of the coil in a cold state and $1.0 \times U_S$			
50 Hz	Pick-up	VA	45
50 Hz	Sealing	VA	1.5
50 Hz	Sealing	W	4.1
60 Hz	Pick-up	VA	45
60 Hz	Sealing	VA	1.5
60 Hz	Sealing	W	4.1
Duty factor		% DF	100
Changeover time at 100 % U_S (recommended value)			
Main contacts			
AC operated			
Closing delay		ms	
Switching times of main contacts AC operated Closing delay, min.		ms	50
Opening delay		ms	
Switching times of main contacts AC operated Opening delay, min.		ms	40
Arcing time		ms	10

Current heat losses (3- or 4-pole)

Open			
at I_e to AC-3/400 V		W	10.3
at I_e to AC-3/400 V		W	10.3
Impedance per pole		m Ω	1.86

Electromagnetic compatibility (EMC)

Emitted interference			according to EN 60947-1
Interference immunity			according to EN 60947-1

Rating data for approved types

Auxiliary contacts			
Pilot Duty			
AC operated			A600
DC operated			P300
General Use			
AC		V	600
AC		A	10
DC		V	250
DC		A	1
Special Purpose Ratings			
Capacitor Switching			
240V 60Hz 3phase		A	48
240V 60Hz 3phase		kVar	20
480V 60Hz 3phase		A	48
480V 60Hz 3phase		kVar	40
600V 60Hz 3phase		A	48

600V 60Hz 3phase	kVar	50
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Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	50
Heat dissipation per pole, current-dependent	P_{vid}	W	4.56
Equipment heat dissipation, current-dependent	P_{vid}	W	13.5
Static heat dissipation, non-current-dependent	P_{vs}	W	4.1
Heat dissipation capacity	P_{diss}	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	60
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			
			Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures			
			Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat			
			Meets the product standard's requirements.
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects			
			Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation			
			Meets the product standard's requirements.
10.2.5 Lifting			
			Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact			
			Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions			
			Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES			
			Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances			
			Meets the product standard's requirements.
10.5 Protection against electric shock			
			Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components			
			Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections			
			Is the panel builder's responsibility.
10.8 Connections for external conductors			
			Is the panel builder's responsibility.
10.9 Insulation properties			
10.9.2 Power-frequency electric strength			
			Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage			
			Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material			
			Is the panel builder's responsibility.
10.10 Temperature rise			
			The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating			
			Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 Electromagnetic compatibility			
			Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 Mechanical function			
			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

Technical data ETIM 8.0

Low-voltage industrial components (EG000017) / Capacitor contactor (EC001079)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Capacitor contactor (ecl@ss10.0.1-27-37-10-06 [AGZ569015])			
Rated control supply voltage U_s at AC 50HZ		V	230 - 230
Rated control supply voltage U_s at AC 60HZ		V	240 - 240
Rated control supply voltage U_s at DC		V	0 - 0
Voltage type for actuating			AC
Number of auxiliary contacts as normally open contact			1
Number of auxiliary contacts as normally closed contact			0
Type of electrical connection of main circuit			Screw connection
Number of normally open contacts as main contact			3
Number of normally closed contacts as main contact			0
Rated blind power at 400 V, 50 Hz		kvar	33.3