

Lamp load contactor, 230 V 50 Hz, 240 V 60 Hz, 220 V 230 V: 20 A,
Contactors for lighting systems



Part no. DILL20(230V50HZ,240V60HZ)
Catalog No. 104408
Alternate Catalog XTCT020C00F
No.
EL-Nummer 4134241
(Norway)

Delivery program

Product range			DILL Lighting contactors
Application			Contactors for lighting systems
Utilization category			AC-1: Non-inductive or slightly inductive loads, resistance furnaces
Rated operational current			
AC-5a			
220 V 230 V	I _e	A	20
380 V 400 V	I _e	A	20
AC-5b			
220 V 230 V	I _e	A	27
380 V 400 V	I _e	A	27
AC-1			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	I _{th} = I _e	A	45
Actuating voltage			230 V 50 Hz, 240 V 60 Hz
Note			Switchgear for lighting systems DIL L12 L18 L20 M7 M9 M12 M17 M25 M32 M40 M50 Permissible completion capacitance Filament (A) 14 21 27 6 7.5 10 14 21 27 33 42 lamp Mercury (A) 12 16 23 5 6.5 8.5 12 16 23 30 38 blended lamps Fluorescent (A) 20 26 35 9 10 15 20 26 35 41 45 lamps, conventional - reactor - starter - connection Fluorescent (A) 20 26 35 5.5 8 13 15 22.5 29 36 47 lamps, conventional - reactor - starter - connection Fluorescent (A) 12 18 20 5 6.5 8.5 12 17.5 22.5 28 35 lamps, duo circuit (series compensated) electronic (A) 12 18 20 3.5 6 10 12 17.5 20 25 30 upstream devices and LED lamps High-Ie [A] 12 18 20 3.5 6 10 12 17.5 20 25 30 pressure mercury- arc lamps

Mechanical shock resistance		g	6.9
Degree of Protection			IP00
Altitude		m	Max. 2000
Weight			
AC operated		kg	0.42

Main conducting paths

Rated impulse withstand voltage	U_{imp}	V AC	8000
Overvoltage category/pollution degree			III/3
Rated insulation voltage	U_i	V AC	690
Rated operational voltage	U_e	V AC	690
Making capacity		A	550
Breaking capacity	380 ... 400 V	A	320
Lifespan, electrical	Operations		10000
Short-circuit protection maximum fuse			
400 V	gG/gL 500 V	A	125

AC

AC-1			
Rated operational current			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	$I_{th} = I_e$	A	45
at 60 °C	$I_{th} = I_e$	A	40
AC-5a operation			
220 V 230 V	I_e	A	20
380 V 400 V	I_e	A	20
AC-5b operation			
220 V 230 V	I_e	A	27
380 V 400 V	I_e	A	27
380 V 400 V	I_e	A	27
Electric lamps			
Filament bulbs		A	27
Mercury blended lamps		A	23
Fluorescent lamp load			
Conventional reactor starter circuit		A	35
Duo circuit		A	35
Electronic upstream devices		A	20
High-pressure mercury vapour lamps		A	20
Metal-halide lamps		A	20
High-pressure sodium lamps		A	20
Low-pressure sodium lamps		A	12
Maximum permissible compensation capacitance		μF	470

Current heat loss

Current heat loss at I_e to AC-5b/400 V		W	4.5
Impedance per pole		mΩ	2.65

Magnet systems

Voltage tolerance			
AC operated	Pick-up	x U_c	
Min. pick-up voltage, AC operated		x U_c	0.15
Pick-up voltage AC operated, max.		x U_c	1.8
Drop-out voltage AC operated	Drop-out	x U_c	
Drop-out voltage, AC-operated, min.		x U_c	0.3
Power consumption of the coil in a cold state and 1.0 x U_S			
Dual-voltage coil 50 Hz	Pick-up	VA	52
Dual-voltage coil 50 Hz	Sealing	VA	7.1
Dual-voltage coil 50 Hz	Sealing	W	2.1

Dual-voltage coil 60 Hz	Pick-up	VA	67
Dual-voltage coil 60 Hz	Sealing	VA	8.7
Dual-voltage coil 60 Hz	Sealing	W	2.1
Duty factor		% DF	100
Operating times			
Closing delay		ms	
Switching times of main contacts AC operated Closing delay, min.		ms	16
Switching times of main contacts AC operated Closing delay, max.		ms	22
Opening delay		ms	
Switching times of main contacts AC operated Opening delay, min.		ms	8
Switching times of main contacts AC operated Opening delay, max.		ms	14

Additional technical data

like the contactar	DIL		M32
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Rating data for approved types

Switching capacity			
General use		A	40
Short Circuit Current Rating		SCCR	
Basic Rating			
SCCR		kA	5
max. Fuse		A	125
max. CB		A	125
480 V High Fault			
SCCR (fuse)		kA	100
max. Fuse		A	125 Class J
SCCR (CB)		kA	22
max. CB		A	32
600 V High Fault			
SCCR (fuse)		kA	100
max. Fuse		A	125 Class J
SCCR (CB)		kA	22
max. CB		A	32
Special Purpose Ratings			
Incandescent Lamps (Tungsten)			
480V 60Hz 3phase, 277V 60Hz 1phase		A	40
600V 60Hz 3phase, 347V 60Hz 1phase		A	40

Electromagnetic compatibility (EMC)

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

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I _n	A	27
Heat dissipation per pole, current-dependent	P _{vid}	W	1.5
Equipment heat dissipation, current-dependent	P _{vid}	W	4.5
Static heat dissipation, non-current-dependent	P _{vs}	W	2.1
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) / Power contactor, AC switching (EC000066)		
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, AC switching (ecl@ss10.0.1-27-37-10-03 [AAB718015])		
Rated control supply voltage Us at AC 50HZ	V	230 - 230
Rated control supply voltage Us at AC 60HZ	V	240 - 240
Rated control supply voltage Us at DC	V	0 - 0
Voltage type for actuating		AC
Rated operation current Ie at AC-1, 400 V	A	20
Rated operation current Ie at AC-3, 400 V	A	0
Rated operation power at AC-3, 400 V	kW	0
Rated operation current Ie at AC-4, 400 V	A	0
Rated operation power at AC-4, 400 V	kW	0
Rated operation power NEMA	kW	0
Modular version		No
Number of auxiliary contacts as normally open contact		0
Number of auxiliary contacts as normally closed contact		0
Type of electrical connection of main circuit		Screw connection
Number of normally closed contacts as main contact		0
Number of normally open contacts as main contact		3