DATASHEET - DILEEM-10(230V50/60HZ)



Contactor, 230 V 50/60 Hz, 3 pole, 380 V 400 V, 3 kW, Contacts N/O = $\frac{1}{2}$ Normally open= 1 N/O, Screw terminals, AC operation



DILEEM-10(230V50/60HZ) Part no. 056674 Catalog No. **Alternate Catalog** XTMC6A10G2

Delivery	program
Product range	

Delivery program			
Product range			Contactors
Application			Mini Contactors for Motors and Resistive Loads
Subrange			Contactors DILEEM
Utilization category			AC-1: Non-inductive or slightly inductive loads, resistance furnaces AC-3/AC-3e: Normal AC induction motors: Starting, switching off while running AC-4: Normal AC induction motors: starting, plugging, reversing, inching
			IE3 ✓
Notes			Also suitable for motors with efficiency class IE3. IE3-ready devices are identified by the logo on their packaging. Also tested according to AC-3e.
Connection technique			Screw terminals
Description			With auxiliary contact
Number of poles			3 pole
Rated operational current			
AC-3			
380 V 400 V	I _e	Α	6.6
AC-1			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	$I_{th} = I_e$	Α	22
Max. rating for three-phase motors, 50 - 60 Hz			
AC-3			
220 V 230 V	P	kW	1.5
380 V 400 V	P	kW	3
660 V 690 V	P	kW	3
AC-4			
220 V 230 V	P	kW	1.1
380 V 400 V	P	kW	2.2
660 V 690 V	P	kW	2.2
Contacts			
N/O = Normally open			1 N/0
Contact sequence			$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
For use with			DILEM
Actuating voltage			230 V 50/60 Hz
Voltage AC/DC			AC operation

Technical data

General			
Standards			IEC/EN 60947, VDE 0660, CSA, UL
Lifespan, mechanical; Coil 50/60 Hz	Operations	x 10 ⁶	7
Lifespan, mechanical	Operations	x 10 ⁶	10

Maximum operating frequency			
Mechanical		Ops./h	9000
electrical (Contactors without overload relay)	Operations/h	орол	Page 05/070
Climatic proofing	орогистопол		Damp heat, constant, to IEC 60068-2-78
omitte prooming			Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature			
Open		°C	-25 - +50
Enclosed		°C	- 25 - 40
Storage		°C	
Min. ambient temperature, storage		°C	- 40
Ambient temperature, storage max.		°C	+ 80
Mounting position			As required, except vertical with terminals A1/A2 at the bottom
Mounting position			
Mechanical shock resistance (IEC/EN 60068-2-27)			
Half-sinusoidal shock, 10 ms			
Basic unit without auxiliary contact module			
Main contacts, make contacts		g	10
Main contacts Make/break contacts		g	
Make		g	8
Basic unit with auxiliary contact module			
Main contacts make contact		g	
Make		g	10
Auxiliary contacts Make/break contacts		g	20 / 20
Degree of Protection			IP20
Protection against direct contact when actuated from front (EN 50274)			Finger and back-of-hand proof
Altitude		m	Max. 2000
Weight		kg	0.17
Terminal capacity of auxiliary and main contacts			
Screw terminals			
Solid		mm ²	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Flexible with ferrule		mm ²	1 x (0.75 - 1.5) 2 x (0.75 - 1.5)
Solid or stranded		AWG	18 - 14
Stripping length		mm	8
Terminal screw			M3.5
Pozidriv screwdriver		Size	2
Standard screwdriver		mm	0.8 x 5.5 1 x 6
Max. tightening torque		Nm	1.2
Main conducting paths		V/ 4.0	2000
Rated impulse withstand voltage	U _{imp}	V AC	6000
Overvoltage category/pollution degree			111/3
Rated insulation voltage	Ui	V AC	690
Rated operational voltage	U _e	V AC	690
Safe isolation to EN 61140			
between coil and contacts		V AC	300
between the contacts		V AC	300

Making capacity (cos φ to IEC/EN 60947)		Α	110
Breaking capacity		^	110
220 V 230 V		۸	90
380 V 400 V		A A	90
500 V		A	64
660 V 690 V		A	42
Short-circuit protection maximum fuse		Α	42
Type "2", 500 V	gL/gG	Α	10
Type "1", 500 V	gL/gG	A	20
AC	94 90	, · ·	
AC-1			
Rated operational current			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	$I_{th} = I_e$	Α	22
at 50 °C	$I_{th} = I_e$	Α	20
at 55 °C	I _{th} =I _e	Α	19
enclosed	I _{th}	Α	16
Notes			At maximum permissible ambient air temperature.
Conventional free air thermal current, 1 pole			
Notes			At maximum permissible ambient air temperature.
open	I _{th}	Α	50
enclosed	I _{th}	A	40
AC-3			
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
Notes			At maximum permissible ambient temperature (open.) Also tested according to AC-3e.
220 V 230 V	I _e	Α	6.6
240 V	I _e	Α	6.6
380 V 400 V	I _e	Α	6.6
415 V	I _e	Α	6.6
440V	I _e	Α	6.6
500 V	I _e	Α	5
660 V 690 V	I _e	Α	3.5
Motor rating	P	kWh	
220 V 230 V	P	kW	1.5
240V	P	kW	1.8
380 V 400 V	P	kW	3
415 V	P	kW	3.1
440 V	P	kW	3.3
500 V	P	kW	3
660 V 690 V	P	kW	3
AC-4			
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
Notes			At maximum permissible ambient air temperature.
220 V 230 V	le	Α	5
240 V	I _e	Α	5
380 V 400 V	I _e	Α	5
415 V	I _e	A	5
440 V	I _e	Α	5
500 V	I _e	A	3.7
660 V 690 V		A	2.9
000 ¥ 000 ¥	l _e	^	L.V

Motor rating	Р	kWh	
220 V 230 V	P	kW	1.1
220 V 230 V 240 V	P		
240 V 380 V 400 V	P	kW	1.3 2.2
	P		
415 V		kW	2.3
440 V	P	kW	2.4
500 V	P	kW	2.2
660 V 690 V DC	P	kW	2.2
Rated operational current open			
DC-1			
12 V	I _e	Α	20
24 V	l _e	A	20
60 V		A	20
	l _e		
110 V	l _e	Α	20
220 V	l _e	Α	20
Magnet systems Voltage telerance			
Voltage tolerance			
AC operated	Diale	v II	0.8 11
Dual-frequency coil 50/60 Hz	Pick-up	x U _c	0.8 - 1.1
Power consumption			
AC operation	D: 1		
Dual-frequency coil 50/60 Hz at 50 Hz	Pick-up	VA	30
Dual-frequency coil 50/60 Hz at 50 Hz	Pick-up	W	26
Dual-frequency coil 50/60 Hz at 50 Hz	Sealing	VA	5.4
Dual-frequency coil 50/60 Hz at 50 Hz	Sealing	W	1.8
Dual-frequency coil 50/60 Hz at 60 Hz	Pick-up	VA	29
Dual-frequency coil 50/60 Hz at 60 Hz	Pick-up	W	24
Dual-frequency coil 50/60 Hz at 60 Hz	Sealing	VA	3.9
Dual-frequency coil 50/60 Hz at 60 Hz	Sealing	W	1.8
Duty factor		% DF	100
Switching times at 100 % U_C			
Make contact		ms	
Closing delay		ms	
Closing delay min.		ms	14
Closing delay max.		ms	21
Opening delay		ms	
Opening delay min.		ms	8
Opening delay max.		ms	18
Closing delay with top mounting auxiliary contact		ms	45
Reversing contactors			
Changeover time at 110 % U_C			
Changeover time min.		ms	16
Changeover time max.		ms	21
Arcing time at 690 V AC		ms	12
Current heat losses (3- or 4-pole)		100	-
at I _{th} , 50 °C		W	5.5
at I _e to AC-3/400 V		W	0.6
Impedance per pole		mΩ	9.18
Auxiliary contacts			Von
Positive operating contacts to EN 60947-5-1 appendix L, including auxiliary module		,,	Yes
Rated impulse withstand voltage	U _{imp}	V AC	6000
Overvoltage category/pollution degree			111/3
Rated insulation voltage	Ui	V AC	690

Note	Safe isolation to EN 61140			
Mathem parametric current			۷۸۲	300
AC15 2007-100				
AC-17			V AG	300
\$ 500 \ \$ 1 \ \$ 1 \ \$ 2 \ \$ 1 \ \$ 2			٨	6
SOUN				
DC UNI 2 5 ms				
Carnacts in series:		l _e	А	1.5
1 1 2 2 6 0 1 3 2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5				
1			Α	
3			Α	
1 3 0 500 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2	60 V	Α	2.5
Control circuit relability In all states of a policy of the state of			Α	1.5
Control circuit reliability Failure rate (at lu = 240 V Cum = 17 V Lm = 5 anA) Component (dispon at U ₀ = 240 V Cum = 17 V Lm = 5 anA) Component (dispon at U ₀ = 240 V Cum = 17 V Lm = 5 anA) AC-15 Operations x 10° 2 DC current Valor 3.5 3.5 Notes Notes Note (at lu = 240 V Cum = 17 V Lm = 5 anA) Note (at lu = 240 V Cum = 17 V Lm = 5 anA) Mosting of the current protection is series at I _n = 0.5 A Operation (at lu = 240 V Cum = 17 V Lm = 5 anA) Note (at lu = 240 V Cum = 17 V Lm = 5 anA) Mosting of the current protection is series at I _n = 0.5 A Operation (at lu = 240 V Cum = 17 V Lm = 5 anA) Note (at lu = 17 V Lm = 5 anA) Short-circuit protection maximum fuse A pg/Ag E PZMA-4 Short-circuit protection maximum fuse A pg/Ag E PZMA-4 Short-circuit protection maximum fuse A pg/Ag E PZMA-4 E PZMA-4 Restrict protection maximum fuse A pg/Ag E PZMA-4		220 V	Α	0.5
Camponent If apan at U = 240 V Camponent If	Conv. thermal current	I _{th}	Α	10
AC-15	Control circuit reliability	Failure rate	λ	$<\!10^{-8},<$ one failure at 100 million operations (at Ue = 24 V DC, Umin = 17 V, Imin = 5.4 mA)
	Component lifespan at $U_e = 240 \text{ V}$			
December Para P	AC-15	Operations	x 10 ⁶	0.2
Notes Switch-on and switch-off conditions based on DC-13, time constant as specified in Short-circuit grating without welding Switch-on and switch-off conditions based on DC-13, time constant as specified in Short-circuit gratection only PXZMB-4 Short-circuit protection maximum fuse PXZMB-4 500 V A g8/gg G 500 V A g8/gg Incompany of the circuit protection and switch-off conditions based on DC-13, time constant as specified with the circuit protection only Incompany of the circuit protection only 500 V A g8/gg Incompany of the circuit protection maximum fuse Incompany of the circuit protection maximum fuse 500 V A g8/gg Incompany of the circuit protection maximum fuse Incompany of the circuit protection maximum fuse 500 V A g8/gg Incompany of the circuit protection maximum fuse Incompany of the circuit protection maximum fuse 600 V Based on the circuit protection maximum fuse Incompany of the circuit protection fuse Incompany of the circuit protection fuse 600 V Based on the circuit protection maximum fuse Incompany of the circuit protection fuse Incompany of the circuit protection fuse 8 Incompany of the circuit protection maximum fuse Incompany of the circuit protection fuse Incompany of the circuit protection fuse <	DC current			
Notes Switch-on and switch-off conditions based on DC-13, time constant as specified in Short-circuit grating without welding Switch-on and switch-off conditions based on DC-13, time constant as specified in Short-circuit gratection only PXZMB-4 Short-circuit protection maximum fuse PXZMB-4 500 V A g8/gg G 500 V A g8/gg Incompany of the circuit protection and switch-off conditions based on DC-13, time constant as specified with the circuit protection only Incompany of the circuit protection only 500 V A g8/gg Incompany of the circuit protection maximum fuse Incompany of the circuit protection maximum fuse 500 V A g8/gg Incompany of the circuit protection maximum fuse Incompany of the circuit protection maximum fuse 500 V A g8/gg Incompany of the circuit protection maximum fuse Incompany of the circuit protection maximum fuse 600 V Based on the circuit protection maximum fuse Incompany of the circuit protection fuse Incompany of the circuit protection fuse 600 V Based on the circuit protection maximum fuse Incompany of the circuit protection fuse Incompany of the circuit protection fuse 8 Incompany of the circuit protection maximum fuse Incompany of the circuit protection fuse Incompany of the circuit protection fuse <	$L/R = 50$ ms: 2 contacts in series at $I_e = 0.5$ A	Operations	v 10 ⁶	0.15
Short-circuit rating without validing Head of the circuit protection only PXZMb-4 Short-circuit protection maximum fuse PXZMb-4 500 V A gd/ggt 0 500 V A fast 10 Current heat loss at a load of In per contact W 1,1 Steffing data for approved types The chase 1 Switching capacity B 1 Maximum monor rating F 1 1, 200 V B 1, 2 2, 200 V B 1, 2 4, 400 V B 1, 2 4, 500 V B 1, 2 5, 500 V B 1, 2 5, 600 V B 1, 2 6, 600 V B 1, 2 1, 150 V B 1, 2 2, 200 V B 1, 2 2, 200 V B 1, 2			X 10	Switch-on and switch-off conditions based on DC-13 time constant as specified
Maximum overcurent protective device Heading of the protection only PKZM0-4 Short-circuit protection maximum fuse A g6/gL 6 500 V A fast 10 500 V A fast 10 500 V A fast 10 Current hear loss at a load of l _{th} per contact W 1 Kating capacity S 1 Switching capacity F 1 Three phase F 1 200 V P 2 460 V P 2 460 V P 3 480 V P 3 560 V P 3 560 V P 3 120 V P 2 200 V P 3 560 V P 3 120 V P 2 200 V P 2 4contract P 2 4contract P 2 4contract P 2 <td></td> <td></td> <td></td> <td>on an and on an an administration of the second of the sec</td>				on an and on an an administration of the second of the sec
Short-circuit protection maximum fuse PCZM0-4 500 V A 96/9L 6 500 V A 96/9L 10 Current heat loss at a load of laper contact W 12 Return data for approved types V 10 Return data for approved types V 15 Maximum motor rating P 15 200 V P 15 200 V P 2 460 V P 2 480 V P 2 575 V P 25 500 V P 25 5115 V P 25 200 V P P 200 V P P 200 V P P 200 V P P 200 V <td></td> <td></td> <td></td> <td></td>				
Short-circuit protection maximum fuse A gG/gL 6 500 V A fast 10 500 V A fast 10 Centrel heat loss at a load of I _{th} per contact W 1 Switching capacity W 1 Maximum motor rating W 1 208 V HP 15 208 V HP 2 230 V HP 2 480 V HP 3 800 V HP 3 575 V HP 25 500 V HP 25 580 V HP 15 600 V HP 25 240 V HP 15 420 V HP 15 420 V HP 15 420 V HP 25 420 V HP 15 420 V HP 15 420 V HP 4600 420 V HP 4600 420 V HP </td <td></td> <td></td> <td></td> <td>PKZM0-4</td>				PKZM0-4
A fast 10			A aG/aL	6
Current heat loss at a load of Imper contact W 1.1 Reting data for approved types Switching capacity Image: Contact of the person of the pers				
Maximum motor rating				
Switching capacity Maximum motor rating Feet Three-phase T				
Three-phase HP 1.5 200 V HP 2 240 V HP 2 460 V HP 3 575 V HP 3 800 V HP 25 115 V HP 0.25 230 V HP 15 240 V HP 15 Audiliary contacts HP 15 Pilot Duty HP 15 AC operated A600 A000 General Use N00 N00 AC N00 N00 General Use N00 N00 AC N00 N00 N00	Switching capacity			
HP 1.5	Maximum motor rating			
200 V	Three-phase			
HP 2 2 2 2 2 2 2 2 2			HP	1.5
240 V HP 3 480 V HP 3 575 V 600 V HP 3 Single-phase HP 25 115 V HP 0.25 230 V HP 1 General use A 15 Auxiliary contacts HP 4600 Pilot Duty A600 A000 General Use A600 A000 General Use V 600 AC V 600 AC A 10 AC A 10 BC A 10 BC BC A 10 BC BC BC 10 B			НР	2
480 V HP 3 575 V 600 V HP 3 Single-phase HP 0.25 115 V 120 V HP 0.25 230 V 240 V HP 1 Auxiliary contacts HP 15 Pilot Duty HP 15 AC operated HP A600 DC operated HP 9300 AC HP A000 AC HP HP HP				
Single-phase HP 25 115 V 120 V HP 1 230 V 240 V HP 1 Auxiliary contacts A 15 Pilot Duty AC operated A600 DC operated P300 P300 AC V 600 AC AC A 10 AC AC A 10 AC AC A 10 DC DC A 10 DC DC A 10			HP	3
115 V 120 V 1 4 230 V 240 V HP 1 General use A 15 Auxiliary contacts Filot Duty A600 AC operated A600 P300 General Use V 600 AC V 600 AC A 10 AC A 10 DC V 250 DC A 0.5			HP	3
120 V HP 1 230 V HP 1 General use A 15 Auxiliary contacts	Single-phase			
240 V Amount of the properties of the			HP	0.25
Pilot Duty A600 DC operated P300 General Use V 600 AC V 600 AC A 10 DC DC V 250 DC A 0.5			HP	1
Pilot Duty 600 AC operated 7300 DC operated 7300 General Use V AC V AC A AC A DC V DC V DC A DC A DC A	General use		Α	15
AC operated A600 DC operated P300 General Use V AC V AC A DC V DC A DC A DC A DC A DC A	Auxiliary contacts			
DC operated P300 General Use V 600 AC A 10 DC V 250 DC A 0.5	Pilot Duty			
General Use V 600 AC A 10 DC V 250 DC A 0.5	AC operated			A600
AC V 600 AC A 10 DC V 250 DC A 0.5	DC operated			P300
AC A 10 DC V 250 DC A 0.5	General Use			
DC V 250 DC A 0.5	AC		V	600
DC A 0.5	AC		Α	10
	DC		V	250
Short Circuit Current Rating SCCR				
			Α	0.5

Basic Rating		
SCCR	kA	5
max. Fuse	Α	45

Design verification as per IEC/EN 61439

200.g.: 1010u.io uo poi 120, 211 01 100			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	6.6
Heat dissipation per pole, current-dependent	P _{vid}	W	0.2
Equipment heat dissipation, current-dependent	P _{vid}	W	0.6
Static heat dissipation, non-current-dependent	P_{vs}	W	1.8
Heat dissipation capacity	P _{diss}	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	50
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 switch gear must be observed. $\label{eq:constraint}$
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.

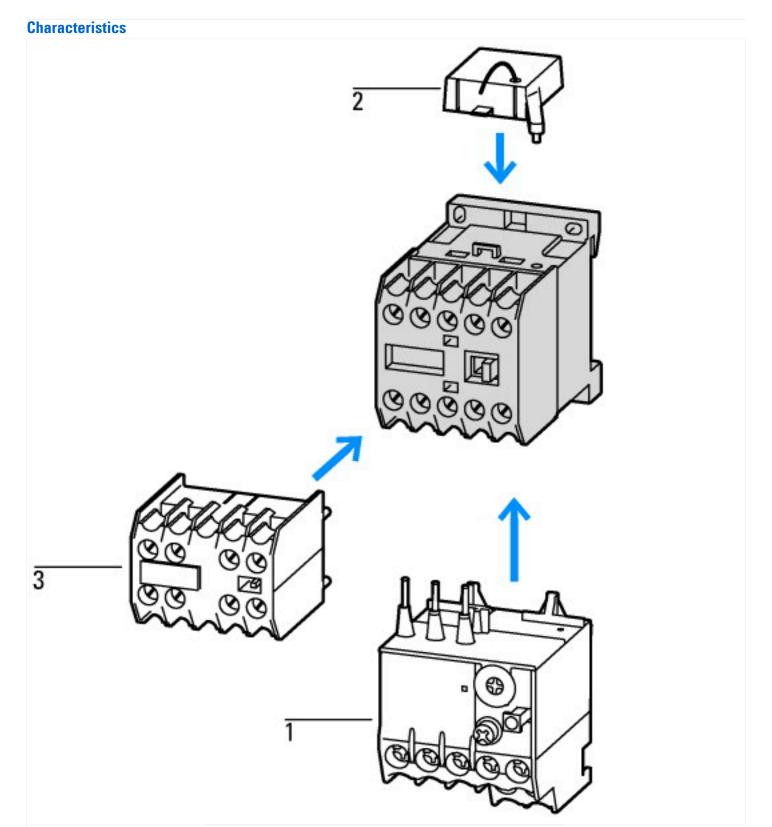
Technical data ETIM 7.0

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	1	230 - 230	
Rated control supply voltage Us at AC 60HZ	V	/	230 - 230	
Rated control supply voltage Us at DC	V	/	0 - 0	
Voltage type for actuating			AC	
Rated operation current le at AC-1, 400 V	А	4	22	
Rated operation current le at AC-3, 400 V	А	4	6.6	
Rated operation power at AC-3, 400 V	k'	(W	3	
Rated operation current le at AC-4, 400 V	А	4	5	
Rated operation power at AC-4, 400 V	k'	άW	2.2	
Rated operation power NEMA	k'	(W	2.2	
Modular version			No	

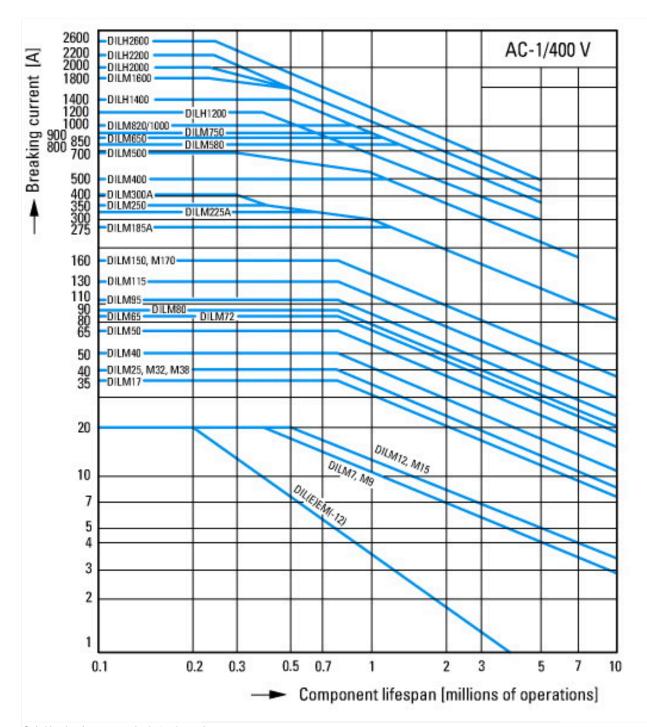
Number of auxiliary contacts as normally open contact	1
Number of auxiliary contacts as normally closed contact	0
Type of electrical connection of main circuit	Screw connection
Number of normally closed contacts as main contact	0
Number of main contacts as normally open contact	3

Approvals

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 14-05; CE marking
UL File No.	E29096
UL Category Control No.	NLDX
CSA File No.	012528
CSA Class No.	3211-04
North America Certification	UL listed, CSA certified
Specially designed for North America	No

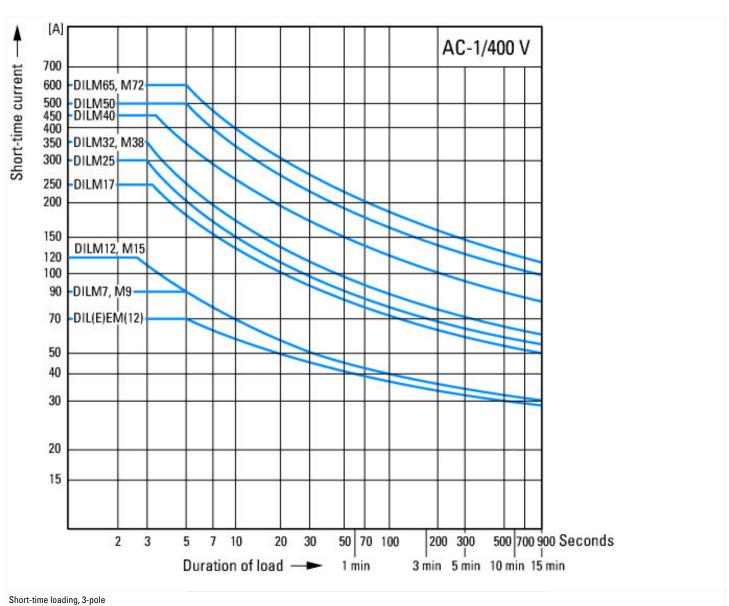


- 1: Overload relay 2: Suppressor 3: Auxiliary contact modules Enclosure totally insulated



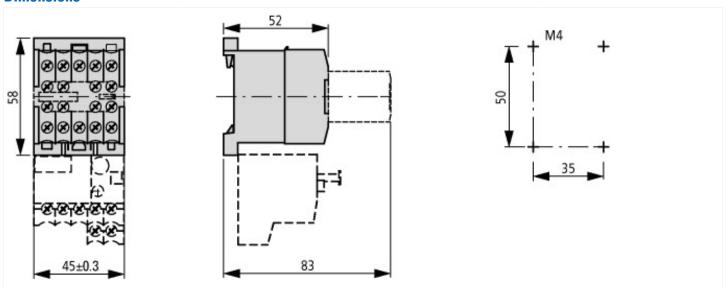
Switching duty for non-motor loads, 3-pole, 4-pole Operating characteristics
Non-inductive or slightly inductive loads
Electrical characteristics
Make: 1 x rated current
Break: 1 x rated current
Utilization category
100 % AC-1
Typical applications

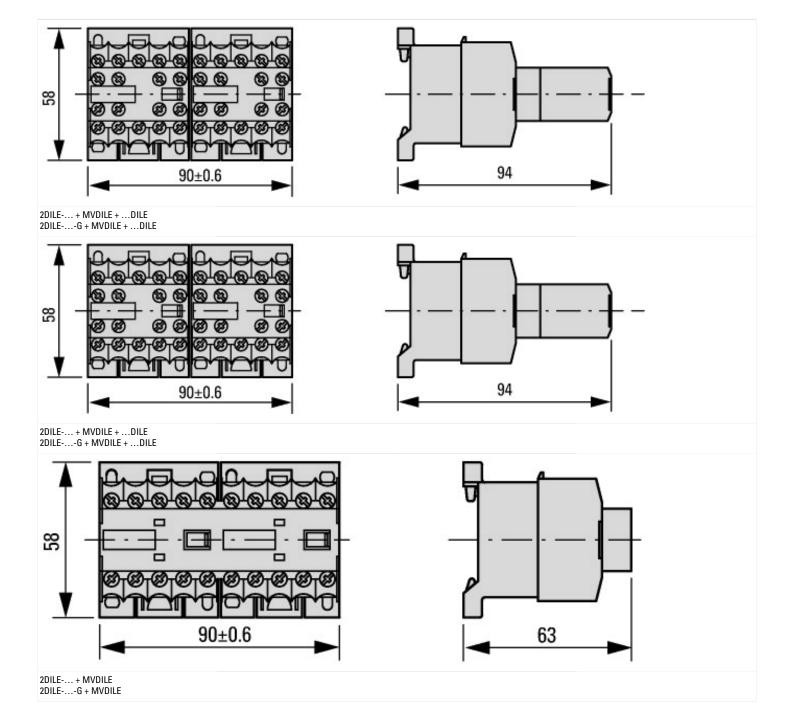
Electric heat



Time interval between two loading cycles: 15 minutes

Dimensions





Additional product information (links)

IL03407009Z (AWA2100-0882) Mini contactor relay

IL03407009Z (AWA2100-0882) Mini contactor relay

 $https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407009Z2020_05.pdf$