

## Contactor, 3p+1N/O, 4kW/400V/AC3

Powering Business Worldwide\*

Part no. DILEM-10-C(190V50HZ,220V60HZ)
Article no. 231659
Catalog No. XTMCC9A10G

## **Delivery program**

Application Subrange  Unification contagony  Workstan category  Workst	Delivery program			
DILEM contactors  AC-1 Normal AC induction motors: starting, switch off during naming AC-4 Normal AC induction motors: starting, switch off during naming AC-4 Normal AC induction motors: starting, switch off during naming AC-4 Normal AC induction motors: starting, plugging, reversing, inching IE3  Connection technique  Connectio	Product range			Contactors
Unitiation category  AC-1 Mormal AC induction motors with efficiency class IE3. IES—  Also suitable for motors with efficiency class IE3. IES—ready devices are identified by the logo on their packaging.  Connection technique  Description  AC-3 Mormal AC induction motors with efficiency class IE3. IES—ready devices are identified by the logo on their packaging.  With audiliary centact  AC-3 Ago audiable for motors with efficiency class IE3. IES—ready devices are identified by the logo on their packaging.  With audiliary centact  AC-3 Ago according to the control of the c	Application			Mini Contactors for Motors and Resistive Loads
Notes  No	Subrange			DILEM contactors
Notes  Connection technique  Connection  Connection  Connection technique  Connection technique  Connection technique  Connection  Connection technique  Connection  Connection technique  Connection  Connection  Connection  Connection  Connection  Connection  Connection  Connection  Connection technique  Connection  C	Utilization category			NAC-3: Normal AC induction motors: starting, switch off during running
				IE3 ✓
Number of poles	Notes			
Number of poles         Rated operational current         AC-3         3 pole           380 V 400 V         Is a conventional free air thermal current, 3 pole, 50 - 60 Hz         Pole Telescope Telescop	Connection technique			Spring-loaded terminals
AC-3         AC-3         AC-3         AC-1         AC-2         AC-3         AC-3         AC-3         AC-3         AC-3         AC-3         AC-4         AC-4 <th< td=""><td>Description</td><td></td><td></td><td>With auxiliary contact</td></th<>	Description			With auxiliary contact
AC-3 380 V 400 V  AC-1  Conventional free air thermal current, 3 pole, 50 - 60 Hz  Open at 40 °C  Max. rating for three-phase motors, 50 - 60 Hz  AC-3  220 V 230 V  P  WW 4 660 V 690 V  P  WW 4 AC-4  220 V 230 V  P  WW 4 AC-4  AC-4  220 V 230 V  P  WW 4 AC-6  AC-4  1 b	Number of poles			3 pole
AC-1	Rated operational current			
AC-1 Conventional free air thermal current, 3 pole, 50 - 60 Hz  Open  at 40 °C  Max. rating for three-phase motors, 50 - 60 Hz  AC-3  220 V 230 V  860 V 890 V  AC-4  220 V 230 V  P  kW  4  4  4  4  4  4  4  4  4  4  4  4  4	AC-3			
Conventional free air thermal current, 3 pole, 50 - 60 Hz   at 40 °C	380 V 400 V	l <sub>e</sub>	Α	9
Open         at 40 °C         I <sub>II</sub> = I <sub>B</sub> A         22           Max. rating for three-phase motors, 50 - 60 Hz         V         V         V           AC-3         220 ∨ 230 ∨         P         kW         22           380 ∨ 400 ∨         P         kW         4           660 ∨ 690 ∨         P         kW         4           AC-4         V         1.5           380 ∨ 400 ∨         P         kW         3           660 ∨ 690 ∨         P         kW         3           Contacts         N/O = Normally open         1 N/O           Contact sequence         A1 1 1 3 1 3 5 1 3 1 3 1 1 3 1 1 1 1 1 1	AC-1			
at 40 ° C         Max. rating for three-phase motors, 50 - 60 Hz         AC-3       Calcalating voltage         AC-3       Calcalating voltage         AC-3       Actinating voltage         AC-3       Actinating voltage         AC-3       Actinating voltage         AC-3       Actinating voltage         AC-4       Actinating voltage         AC-4       Actinating voltage         AC kW       Actinating voltage         AC kW       Actinating voltage         AC kW       Actinating voltage         AC kW       Actinating voltage	Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Max. rating for three-phase motors, 50 - 60 Hz         AC-3       P       kW       2.2         380 V 400 V       P       kW       4         660 V 690 V       P       kW       4         220 V 230 V       P       kW       1.5         380 V 400 V       P       kW       3         660 V 690 V       P       kW       3         Contacts         N/0 = Normally open       1 N/0         Contact sequence       AT 1 1 3 5 13       13 15 13         AC Use with      DILEM-C      DILEM-C         AC Use with      DILEM-C      DILEM-C         AC Use with      DILEM-C      DILEM-C         AC Use with      DILEM-C      DILEC         AC Use with      DILEC      DILEC         AC Use with      DILEC      DILEC         AC Use with      DILEC Use With      DILEC Use With	Open			
AC-3  220 V 230 V  380 V 400 V  660 V 690 V  AC-4  220 V 230 V  P	at 40 °C	$I_{th} = I_e$	Α	22
220 V 230 V	Max. rating for three-phase motors, 50 - 60 Hz			
Second	AC-3			
660 V 690 V AC-4  220 V 230 V P	220 V 230 V	P	kW	2.2
AC-4  220 V 230 V  P	380 V 400 V	P	kW	4
220 V 230 V	660 V 690 V	P	kW	4
Result	AC-4			
660 V 690 V P kW 3  Contacts  N/0 = Normally open	220 V 230 V	P	kW	1.5
Contacts       1 N/0         Contact sequence       1 N/0         Contact sequence       A1 1 3 5 13         For use with      DILEM-C         Actuating voltage       190 V 50 Hz, 220 V 60 Hz	380 V 400 V	P	kW	3
N/0 = Normally open  Contact sequence  A1 1 3 5 13  A2 2 4 6 14  For use with DILEM-CDILE-C  Actuating voltage  190 V 50 Hz, 220 V 60 Hz	660 V 690 V	P	kW	3
Contact sequence  A1 1 3 5 13  A2 2 4 6 14  For use with DILEM-CDILE-C  Actuating voltage  190 V 50 Hz, 220 V 60 Hz	Contacts			
For use withDILEM-CDILE-C Actuating voltage 190 V 50 Hz, 220 V 60 Hz	N/O = Normally open			1 N/O
DILE-C Actuating voltage 190 V 50 Hz, 220 V 60 Hz	Contact sequence			<del></del>
	For use with			
Voltage AC/DC AC operation	Actuating voltage			190 V 50 Hz, 220 V 60 Hz
	Voltage AC/DC			AC operation

# **Technical data**

#### General

delicial			
Standards			IEC/EN 60947, VDE 0660, CSA, UL
Lifespan, mechanical; Coil 50/60 Hz	Operations	x 10 <sup>6</sup>	7
Lifespan, mechanical	Operations	x 10 <sup>6</sup>	10
Maximum operating frequency			
Mechanical		Ops./h	9000
electrical (Contactors without overload relay)	Operations/h		Page 05/070
Climatic proofing			Damp heat, constant, to IEC 60068-2-78

			Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature			
Open		°C	-25 - +50
Enclosed		°C	- 25 - 40
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	10/8
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
Weight		kg	0.2
Terminal capacity of auxiliary and main contacts			
Screw terminals			
Solid or stranded		AWG	18 - 14
Spring-loaded terminals			
Flexible with ferrule		mm <sup>2</sup>	1 x (1 - 2.5) 2 x (1 - 2.5)
Standard screwdriver		mm	0.6 x 3.5
Main conducting paths			
Rated impulse withstand voltage	U <sub>imp</sub>	V AC	6000
Overvoltage category/pollution degree			111/3
Rated insulation voltage	Ui	V AC	690
Rated operational voltage	U <sub>e</sub>	V AC	690
Safe isolation to EN 61140			
between coil and contacts		V AC	300
between the contacts		V AC	300
Making capacity ( $\cos \phi$ to IEC/EN 60947)		Α	110
Breaking capacity			
220 V 230 V		Α	90
380 V 400 V		Α	90
500 V		Α	64
660 V 690 V		Α	42
Short-circuit protection maximum fuse			
Type "2" coordination	gL/gG	Α	10
Type "1" coordination	gL/gG	Α	20
AC AC-1			
Rated operational current			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			

40.00		۸	.00
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 <sub>th</sub>	Α	50
enclosed	I <sub>th</sub>	Α	40
AC-3			
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
Notes			At maximum permissible ambient air temperature.
220 V 230 V	I <sub>e</sub>	A	9
240 V	I <sub>e</sub>	Α	9
380 V 400 V	I <sub>e</sub>	A	9
415 V	l <sub>e</sub>	A	9
440V	l <sub>e</sub>	Α	9
500 V	l <sub>e</sub>	Α	6.4
660 V 690 V	le	Α	4.8
Motor rating	P	kWh	
220 V 230 V	P	kW	2.2
240V	P	kW	2.5
380 V 400 V	P	kW	4
415 V	P	kW	4.3
440 V	P	kW	4.6
500 V	P	kW	4
660 V 690 V	P	kW	4
AC-4			
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
Notes			At maximum permissible ambient air temperature.
220 V 230 V	I <sub>e</sub>	Α	6.6
240 V	le	Α	6.6
380 V 400 V	I <sub>e</sub>	Α	6.6
415 V	I <sub>e</sub>	Α	6.6
440 V	I <sub>e</sub>	Α	6.6
500 V	I <sub>e</sub>	Α	5
660 V 690 V	I <sub>e</sub>	A	3.4
Motor rating	P	kWh	
220 V 230 V	P		1.5
240 V	P		1.8
380 V 400 V	P	kW	3
415 V	P		3.1
440 V	P		3.3
500 V	P	kW	3
660 V 690 V	P	kW	3
DC	•		1-
Rated operational current open			
DC-1			
12 V	I <sub>e</sub>	Α	20
24 V	I <sub>e</sub>	A	20
60 V		A	20
110 V	l <sub>e</sub>	A	20

12	220 V	I <sub>e</sub>	Α	20
12 V				
100		l <sub>a</sub>	Δ	8
COL V				
110 V				
12 V				
12 V		Ie	А	3
24 V   I   I   A   2.5				
1930 \		l <sub>e</sub>	Α	
110 V	24 V	l <sub>e</sub>	Α	2.5
	60 V	l <sub>e</sub>	Α	2.5
Current heat losses G- or 4-pde)         W         2           to Ing.         W         2           x1 It, to AC-3400 V         W         0.5           Magnet Systems         Valuage before         Valuage before           AC operated         Simple voltage coil 50 Hz and disal-voltage coil 50 Hz, 60 Hz         Pick up         x U <sub>c</sub> 0.8 - 1.1           Power consumption         AC.         AC.         0.8 - 1.1           Simple voltage coil 50 Hz and disal-voltage coil 50 Hz, 60 Hz         Pick up         VA         25           Simple-voltage coil 50 Hz and disal-voltage coil 50 Hz, 60 Hz         Pick up         VA         25           Simple-voltage coil 50 Hz and disal-voltage coil 50 Hz, 60 Hz         Sealing         VA         4.8           Simple-voltage coil 50 Hz and disal-voltage coil 50 Hz, 60 Hz         Sealing         VA         3.3           Disal-frequency coil 50000 Hz at 50 Hz         Sealing         VA         3.3           Disal-frequency coil 50000 Hz at 50 Hz         Sealing         VA         5.4           Disal-frequency coil 50000 Hz at 50 Hz         Sealing         VA         5.4           Disal-frequency coil 5000 Hz at 50 Hz         Sealing         VA         2.4           Disal-frequency coil 5000 Hz at 50 Hz         Sealing <th< td=""><td>110 V</td><td>I<sub>e</sub></td><td>Α</td><td>1.5</td></th<>	110 V	I <sub>e</sub>	Α	1.5
to Is In at Is AC-3400 V W 0.5  Magnet systems  Vollage tolerance  AC operated  Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz  Dual-frequency coil 50 Mz and dual-voltage coil 50 Hz, 60 Hz  Single-voltage coil 50 Hz and dual-voltage coil 50 Hz and dual-voltage coil 50 Hz  Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz  Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz  Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz  Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz  Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz  Single-voltage coil 50	220 V	I <sub>e</sub>	Α	0.3
Magnet Systems	Current heat losses (3- or 4-pole)			
Magnet systems         Voltage to letrance         Colorance           AC operated         Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 80 Hz         Pick-up         x U <sub>c</sub> 0.8 - 1.1           Dual-frequency coil 50 90 Hz         Pick-up         x U <sub>c</sub> 0.85 - 1.1           Power consumption         AC operation         VA         25           Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 80 Hz         Pick-up         VA         25           Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 80 Hz         Pick-up         VA         4.6           Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 80 Hz         Sealing         VA         4.6           Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 80 Hz         Sealing         VA         4.6           Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 80 Hz         Sealing         VA         4.6           Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 80 Hz         Sealing         VA         3.0           Dual-frequency coil 500 Hz at 50 Hz         Sealing         VA         3.0           Dual-frequency coil 500 Hz at 50 Hz         Sealing         VA         5.4           Dual-frequency coil 500 Hz at 50 Hz         Sealing         VA         3.9           Dual-frequency coil 500 Hz at 50 Hz	to $I_{th}$		W	2
Voltage tolerance           AD operation         Pick-up         X U <sub>C</sub> 0.8-1.1           Single-voltage coil 50 Mz and dual-voltage coil 50 Mz, 80 Mz         Pick-up         X U <sub>C</sub> 0.35-1.1           Power consumption           AD operation         Single-voltage coil 50 Mz and dual-voltage coil 50 Mz, 80 Mz         Pick-up         VA         25           Single-voltage coil 50 Mz and dual-voltage coil 50 Mz, 80 Mz         Pick-up         VA         25           Single-voltage coil 50 Mz and dual-voltage coil 50 Mz, 80 Mz         Sealing         VA         46           Single-voltage coil 50 Mz and dual-voltage coil 50 Mz, 80 Mz         Sealing         VA         46           Single-voltage coil 50 Mz and dual-voltage coil 50 Mz and 50 Mz         Sealing         VA         46           Single-voltage coil 50 Mz and 50 Mz         Sealing         VA         46           Single-voltage coil 50 Mz and 50 Mz         Sealing         VA         40           Dual-frequency coil 50 Mz and 50 Mz         Sealing         VA         54           Dual-frequency coil 50 Mz bit and 50 Mz         Sealing         VA         25           Dual-frequency coil 50 Mz bit and 50 Mz         Sealing         VA         24           Dual-frequency coil 50 Mz bit and 50 Mz         Sea	at I <sub>e</sub> to AC-3/400 V		W	0.5
AC operated  Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 50 Hz  Pick-up  XU <sub>Q</sub> 0.55 - 1.1  Power consumption  AC operation  Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz  Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz  Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz  Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz  Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz  Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz  Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz  Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz  Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz  Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz  Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz  Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz  Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz  Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz  Dial-frequency coil 50 Hz and 50 Hz  Dial-frequency coil 50 Hz and 50 Hz  Single-voltage coil 50 Hz and 50 Hz  Dial-frequency coil 50 Hz and 50 Hz  Single-voltage coil 50 Hz  Single-voltage coi				
Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz	Voltage tolerance			
Dual-frequency coil 50/80 Hz   Pick-up   X U <sub>c</sub>   0.85 - 1.1				
Power consumption	Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz	Pick-up	x U <sub>c</sub>	0.8 - 1.1
AC operation   Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 50 Hz   Pick-up   V2   25	Dual-frequency coil 50/60 Hz	Pick-up	x U <sub>c</sub>	0.85 - 1.1
Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz   Pick-up   V2   V3   V4   V4   V5   V5   V5   V5   V5   V5	Power consumption			
Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz   Sealing   VA   4.6	AC operation			
Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz   Sealing   W   1.3	Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz	Pick-up	VA	25
Single-voltage coil 50 Hz and dual-voltage coil 50 Hz a0 Hz   Pick-up   VA   30	Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz	Pick-up	W	22
Dual-frequency coil 50/60 Hz at 50 Hz   Pick-up   VA   30	Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz	Sealing	VA	4.6
Dual-frequency coil 50/60 Hz at 50 Hz   Pick-up   W   26	Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz	Sealing	W	1.3
Dual-frequency coil 50/60 Hz at 50 Hz   Sealing   VA   5.4	Dual-frequency coil 50/60 Hz at 50 Hz	Pick-up	VA	30
Dual-frequency coil 50/60 Hz at 50 Hz   Dual-frequency coil 50/60 Hz at 60 Hz   Pick-up   VA   29	Dual-frequency coil 50/60 Hz at 50 Hz	Pick-up	W	26
Dual-frequency coil 50/60 Hz at 60 Hz	Dual-frequency coil 50/60 Hz at 50 Hz	Sealing	VA	5.4
Dual-frequency coil 50/60 Hz at 60 Hz         Prick-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         1.1           Duty factor         % DF         100           Switching times at 100 % U <sub>c</sub> W         1.1           Make contact         ms	Dual-frequency coil 50/60 Hz at 50 Hz	Sealing	W	1.6
Dual-frequency coil 50/60 Hz at 60 Hz         Sealing         VA         3.9           Dual-frequency coil 50/60 Hz at 60 Hz         Sealing         W         1.1           Duty factor         % DF         100           Switching times at 100 % U <sub>c</sub> W             Make contact         ms              Closing delay         ms         14	Dual-frequency coil 50/60 Hz at 60 Hz	Pick-up	VA	29
Dual-frequency coil 50/60 Hz at 60 Hz  Duty factor  Switching times at 100 % Uc  Make contact  Closing delay  Closing delay min.  Closing delay max.  Opening delay min.  Opening delay min.  Maxe  Opening delay min.  Closing delay min.  Closing delay min.  Maxe  Opening delay min.  Closing delay min.  Maxe  Opening delay min.  Maxe  Opening delay min.  Maxe  Opening delay min.  Maxe  Opening delay max.  Closing delay with top mounting auxiliary contact  Maxe  Max	Dual-frequency coil 50/60 Hz at 60 Hz	Pick-up	W	24
Duty factor	Dual-frequency coil 50/60 Hz at 60 Hz	Sealing	VA	3.9
Switching times at 100 % U <sub>c</sub> Make contact	Dual-frequency coil 50/60 Hz at 60 Hz	Sealing	W	1.1
Make contact  Closing delay  Closing delay min.  Closing delay max.  Opening delay  Opening delay min.  Opening delay min.  Opening delay min.  Service of the service of t	Duty factor		% DF	100
Closing delay min.  Closing delay max.  Opening delay max.  Opening delay min.  Opening delay min.  Opening delay min.  Opening delay min.  Solution of the properties of the	Switching times at 100 % $U_c$			
Closing delay min.  Closing delay max.  Opening delay  Opening delay min.  Opening delay min.  Opening delay min.  Service of the service of	Make contact		ms	
Closing delay max.  Opening delay  Opening delay min.  Ms  8  Opening delay max.  Ms  18  Closing delay with top mounting auxiliary contact  Ms  Ms  Ms  Ms  Ms  18  Closing delay with top mounting auxiliary contact  Ms  Ms  Ms  Ms  Ms  Ms  Ms  Ms  Ms  M	Closing delay		ms	
Opening delay Opening delay min.  Opening delay max.  Opening delay max.  Closing delay with top mounting auxiliary contact  ms max. 45  Reversing contactors  Changeover time at 110 % U <sub>c</sub> Changeover time min.  Changeover time max.  Arcing time at 690 V AC  Lifespan, mechanical; Coil 50/60 Hz  ms  8  18  18  18  18  18  19  18  19  18  18	Closing delay min.		ms	14
Opening delay min.  Opening delay max.  Closing delay with top mounting auxiliary contact  Reversing contactors  Changeover time at 110 % U <sub>c</sub> Changeover time min.  Changeover time max.  Ms 16  Changeover time max.  Ms 21  Arcing time at 690 V AC  ms max. 12  Coil  Lifespan, mechanical; Coil 50/60 Hz  Lifespan, mechanical; Coil 50/60 Hz			ms	21
Opening delay max.  Closing delay with top mounting auxiliary contact  Reversing contactors  Changeover time at 110 % U <sub>c</sub> Changeover time min.  Ms 16  Changeover time max.  Ms 21  Arcing time at 690 V AC  Lifespan, mechanical; Coil 50/60 Hz  Ms 18  Max. 45  Ms max. 45  Ms 7			ms	
Closing delay with top mounting auxiliary contact  Reversing contactors  Changeover time at 110 % U <sub>c</sub> Changeover time min.  Changeover time max.  Mrs. 16  Changeover time max.  Arcing time at 690 V AC  Lifespan, mechanical; Coil 50/60 Hz  ms max. 45  ms 16  21  ms max. 12			ms	
Reversing contactors  Changeover time at 110 % U <sub>c</sub> Changeover time min.  Changeover time max.  Ms 16  Changeover time max.  Ms 21  Arcing time at 690 V AC  ms max. 12  Coil  Lifespan, mechanical; Coil 50/60 Hz  x 10 <sup>6</sup> 7			ms	18
Changeover time at 110 % U <sub>c</sub> Changeover time min.  ms 16  Changeover time max.  ms 21  Arcing time at 690 V AC  ms max. 12  Coil  Lifespan, mechanical; Coil 50/60 Hz  x 10 <sup>6</sup> 7			ms	max. 45
Changeover time min. ms 16 Changeover time max. ms 21 Arcing time at 690 V AC ms max. 12  Coil Lifespan, mechanical; Coil 50/60 Hz x 10 <sup>6</sup> 7				
Changeover time max. ms 21 Arcing time at 690 V AC ms max. 12  Coil  Lifespan, mechanical; Coil 50/60 Hz x 10 <sup>6</sup> 7	Changeover time at 110 % $\rm U_{\rm C}$			
Arcing time at 690 V AC ms max. 12  Coil  Lifespan, mechanical; Coil 50/60 Hz x 10 <sup>6</sup> 7	Changeover time min.		ms	16
Coil  Lifespan, mechanical; Coil 50/60 Hz x 10 <sup>6</sup> 7	Changeover time max.		ms	21
Lifespan, mechanical; Coil 50/60 Hz x 10 <sup>6</sup> 7			ms	max. 12
A 10				
Auxiliary contacts			x 10 <sup>6</sup>	7
	Auxiliary contacts			
Positive operating contacts to EN 60947-5-1 appendix L, including auxiliary contact  module  Yes	module			
Rated impulse withstand voltage U <sub>imp</sub> V AC 6000	Rated impulse withstand voltage	U <sub>imp</sub>	V AC	6000

Overvoltage category/pollution degree			III/3
Rated insulation voltage	Ui	V AC	690
Rated operational voltage	U <sub>e</sub>	V AC	600
Safe isolation to EN 61140			
between coil and auxiliary contacts		V AC	300
between the auxiliary contacts		V AC	300
Rated operational current			
AC-15			
220 V 240 V	l <sub>e</sub>	Α	6
380 V 415 V	I <sub>e</sub>	Α	3
500 V	l <sub>e</sub>	Α	1.5
DC L/R ≦ 15 ms			
Contacts in series:		Α	
1	24 V	Α	2.5
2	60 V	Α	2.5
3	100 V	Α	1.5
3	220 V	Α	0.5
Conv. thermal current	I <sub>th</sub>	Α	10
Control circuit reliability	Failure rate	λ	$<10^{-8}, <$ one failure at 100 million operations (at Ue = 24 V DC, Umin = 17 V, $I_{min}$ = 5.4 mA)
Component lifespan at U <sub>e</sub> = 240 V			
AC-15	Operations	x 10 <sup>6</sup>	0.2
DC current			
$L/R = 50$ ms: 2 contacts in series at $I_e = 0.5$ A	Operations	x 10 <sup>6</sup>	0.15
Notes			Switch-on and switch-off conditions based on DC-13, time constant as specified
Short-circuit rating without welding			
Maximum overcurrent protective device			
Short-circuit protection only			PKZM0-4
Short-circuit protection maximum fuse			
500 V		A gG/gL	6
500 V		A fast	10
Current heat loss at a load of I <sub>th</sub> per contact		W	0.3

# Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	9
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0.4
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	1.2
Static heat dissipation, non-current-dependent	$P_{vs}$	W	1.8
Heat dissipation capacity	P <sub>diss</sub>	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	50
EC/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.

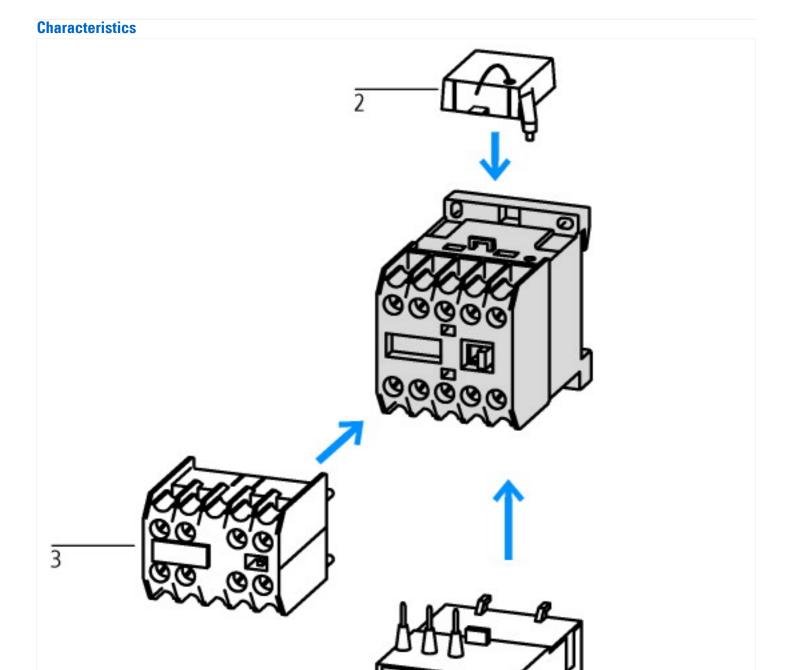
10.4 Clearances and creepage distances	Meets the product standard's requirements.
10.5 Protection against electric shock	Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components	Does not apply, since the entire switchgear needs to be evaluated.
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 6.0**

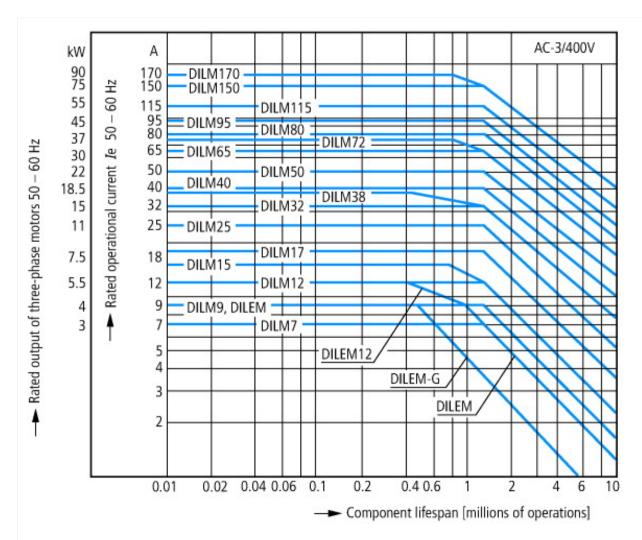
Low-voltage industrial components (EG000017) / Power contactor, AC switching (EG	C000066)		
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, AC switching (ecl@ss8.1-27-37-10-03 [AAB718012])			
Rated control supply voltage Us at AC 50HZ		V	190 - 190
Rated control supply voltage Us at AC 60HZ		V	220 - 220
Rated control supply voltage Us at DC		V	0 - 0
Voltage type for actuating			AC
Rated operation current le at AC-1, 400 V		Α	22
Rated operation current le at AC-3, 400 V		Α	9
Rated operation power at AC-3, 400 V		kW	4
Rated operation current le at AC-4, 400 V		Α	6.6
Rated operation power le at AC-4, 400 V		kW	3
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			Spring clamp 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



Squirrel-cage motor Operating characteristics Starting:from rest Stopping:after attaining full running speed Electrical characteristics Make: up to 6 x rated motor current Break: up to 1 x rated motor current Utilization category 100 % AC-3 Typical applications Compressors Lifts Mixers Pumps Escalators Agitators

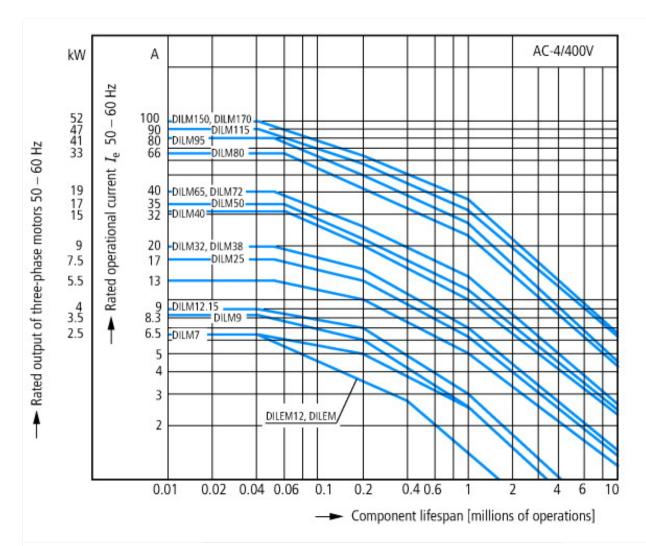
Fans Conveyor belts

Centrifuges Hinged flaps

Bucket-elevators

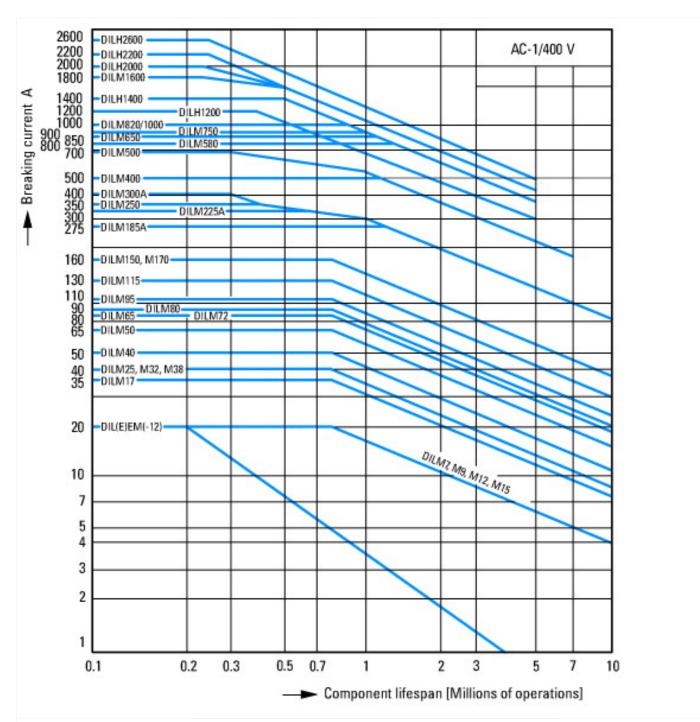
Air conditioning system

General drives in manufacturing and processing machines



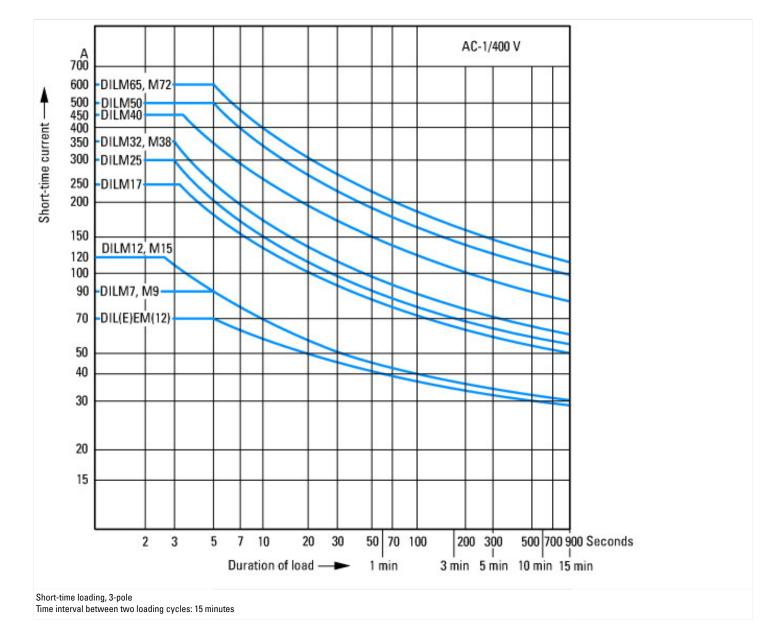
Extreme switching duty Squirrel-cage motor Operating characteristics Inching, plugging, reversing Electrical characteristics Make: up to 6 x rated motor current Break: up to 6 x rated motor current Utilization category 100 % AC-4 Typical applications Printing presses Wire-drawing machines Centrifuges

Special drives for manufacturing and processing machines

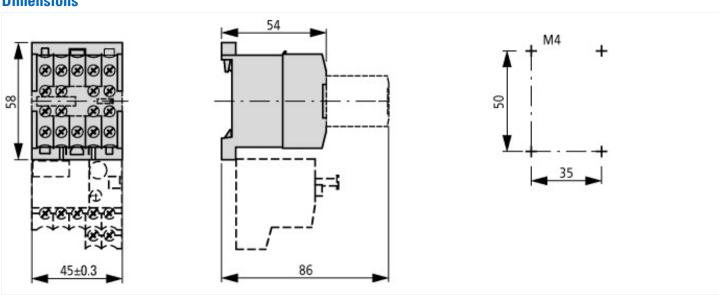


Switching duty for non-motor loads, 3-pole, 4-pole Operating characteristics
Non-inductive or slightly inductive loads
Electrical characteristics
Make: 1 x rated current
Break: 1 x rated current
Utilization category
100 % AC-1
Typical applications

Electric heat



### **Dimensions**



## **Additional product information (links)**

IL03407009Z (AWA2100-0882) mini contactor relay			
IL03407009Z (AWA2100-0882) mini contactor relay	09Z (AWA2100-0882) mini contactor ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407009Z2016_03.pdf		
UL/CSA: Approved rating data	http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&startpage=5.84		