



Powering Business Worldwide™



**Contactor, 380 V 400 V 7.5 kW, 2 N/O, 1 NC, 230 V 50 Hz, 240 V 60 Hz, AC operation, Screw terminals**

**Part no. DILM17-21(230V50HZ,240V60HZ)**  
**Catalog No. 277068**  
**Alternate Catalog No. XTCE018C21F**

**Delivery program**

Product range			Contactors
Application			Contactors for Motors
Subrange			Complete devices up to 170 A
Utilization category			AC-1: Non-inductive or slightly inductive loads, resistance furnaces NAC-3: Normal AC induction motors: starting, switch off during running AC-4: Normal AC induction motors: starting, plugging, reversing, inching
Connection technique			Screw terminals
Notes			Also suitable for motors with efficiency class IE3. IE3-ready devices are identified by the logo on their packaging.

**Rated operational current**

AC-3			
380 V 400 V	$I_e$	A	18
AC-1			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	$I_{th} = I_e$	A	40
enclosed	$I_{th}$	A	32
Conventional free air thermal current, 1 pole			
open	$I_{th}$	A	88
enclosed	$I_{th}$	A	80

**Max. rating for three-phase motors, 50 - 60 Hz**

AC-3			
220 V 230 V	P	kW	5
380 V 400 V	P	kW	7.5
660 V 690 V	P	kW	11
AC-4			
220 V 230 V	P	kW	2.5
380 V 400 V	P	kW	4.5
660 V 690 V	P	kW	6.5

**Contacts**

N/O = Normally open			2 N/O
N/C = Normally closed			1 NC

**Instructions**

Instructions			Contacts to EN 50 012. with mirror contact.
Contact sequence			
Actuating voltage			230 V 50 Hz, 240 V 60 Hz
Voltage AC/DC			AC operation

**Technical data**

Standards			IEC/EN 60947, VDE 0660, UL, CSA
Lifespan, mechanical			

AC operated	Operations	x 10 <sup>6</sup>	10
Operating frequency, mechanical			
AC operated	Operations/h		5000
Climatic proofing			
Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30			
Ambient temperature			
Open	°C		-25 - +60
Enclosed	°C		- 25 - 40
Storage	°C		- 40 - 80
Mounting position			
Mechanical shock resistance (IEC/EN 60068-2-27)			
Half-sinusoidal shock, 10 ms			
Main contacts			
N/O contact	g		10
Auxiliary contacts			
N/O contact	g		7
N/C contact	g		5
Mechanical shock resistance (IEC/EN 60068-2-27) when tabletop-mounted			
Half-sinusoidal shock, 10 ms			
Main contacts			
N/O contact	g		6.9
Auxiliary contacts			
N/O contact	g		5.3
N/C contact	g		3.5
Degree of Protection			
			IP00
Protection against direct contact when actuated from front (EN 50274)			
			Finger and back-of-hand proof
Weight			
AC operated	kg		0.42
Screw connector terminals			
Terminal capacity main cable			
Solid	mm <sup>2</sup>		1 x (0.75 - 16) 2 x (0.75 - 10)
Flexible with ferrule	mm <sup>2</sup>		1 x (0.75 - 16) 2 x (0.75 - 10)
Stranded	mm <sup>2</sup>		1 x 16
Solid or stranded	AWG		single 18 - 6, double 18 - 8
Stripping length	mm		10
Terminal screw			M5
Tightening torque	Nm		3.2
Tool			
Pozidriv screwdriver	Size		2
Standard screwdriver	mm		0.8 x 5.5 1 x 6
Terminal capacity control circuit cables			
Solid	mm <sup>2</sup>		1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Flexible with ferrule	mm <sup>2</sup>		1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Solid or stranded	AWG		18 - 14
Stripping length	mm		10
Terminal screw			M3.5
Tightening torque	Nm		1.2
Tool			

Pozidriv screwdriver	Size	2
Standard screwdriver	mm	0.8 x 5.5 1 x 6

### 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
Safe isolation to EN 61140			
between coil and contacts		V AC	440
between the contacts		V AC	440
Making capacity (p.f. to IEC/EN 60947)			
	$U_p$ to 690 V	A	238
Breaking capacity			
220 V 230 V		A	170
380 V 400 V		A	170
500 V		A	170
660 V 690 V		A	120
Short-circuit rating			
Short-circuit protection maximum fuse			
Type "2" coordination			
400 V	gG/gL 500 V	A	35
690 V	gG/gL 690 V	A	35
Type "1" coordination			
400 V	gG/gL 500 V	A	63
690 V	gG/gL 690 V	A	50

### 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	40
at 50 °C	$I_{th} = I_e$	A	38
at 55 °C	$I_{th} = I_e$	A	37
at 60 °C	$I_{th} = I_e$	A	35
enclosed	$I_{th}$	A	32
Conventional free air thermal current, 1 pole			
open	$I_{th}$	A	88
enclosed	$I_{th}$	A	80
AC-3			
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
Notes			At maximum permissible ambient temperature (open.)
220 V 230 V	$I_e$	A	18
240 V	$I_e$	A	18
380 V 400 V	$I_e$	A	18
415 V	$I_e$	A	18
440V	$I_e$	A	18
500 V	$I_e$	A	18
660 V 690 V	$I_e$	A	12
380 V 400 V	$I_e$	A	18
Motor rating	P	kWh	
220 V 230 V	P	kW	5
240V	P	kW	5.5
380 V 400 V	P	kW	7.5

415 V	P	kW	10
440 V	P	kW	10.5
500 V	P	kW	12
660 V 690 V	P	kW	11
<b>AC-4</b>			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	I <sub>e</sub>	A	10
240 V	I <sub>e</sub>	A	10
380 V 400 V	I <sub>e</sub>	A	10
415 V	I <sub>e</sub>	A	10
440 V	I <sub>e</sub>	A	10
500 V	I <sub>e</sub>	A	10
660 V 690 V	I <sub>e</sub>	A	8
Motor rating			
220 V 230 V	P	kW	2.5
240 V	P	kW	3
380 V 400 V	P	kW	4.5
415 V	P	kW	5
440 V	P	kW	5.5
500 V	P	kW	6
660 V 690 V	P	kW	6.5

## DC

Rated operational current, open			
DC-1			
60 V	I <sub>e</sub>	A	35
110 V	I <sub>e</sub>	A	35
220 V	I <sub>e</sub>	A	35

## Current heat loss

3 pole, at I <sub>th</sub> (60°)		W	7.9
Current heat loss at I <sub>e</sub> to AC-3/400 V		W	2.1
Impedance per pole		mΩ	2.7

## Magnet systems

Voltage tolerance			
AC operated	Pick-up	x U <sub>c</sub>	0.8 - 1.1
Drop-out voltage AC operated	Drop-out	x U <sub>c</sub>	0.3 - 0.6
Power consumption of the coil in a cold state and 1.0 x U <sub>S</sub>			
50 Hz	Pick-up	VA	52
50 Hz	Sealing	VA	7.1
50 Hz	Sealing	W	2.1
60 Hz	Pick-up	VA	67
60 Hz	Sealing	VA	8.7
60 Hz	Sealing	W	2.1
50/60 Hz	Sealing	W	2.5 2
Duty factor		% DF	100
Changeover time at 100 % U <sub>S</sub> (recommended value)			
Main contacts			
AC operated			
Closing delay		ms	16 - 22
Opening delay		ms	8 - 14
Arcing time		ms	10
Lifespan, mechanical; Coil 50/60 Hz		x 10 <sup>6</sup>	Mechanical lifespan at 50 Hz approx. 30% lower than under "Technical data, general"

## Electromagnetic compatibility (EMC)

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

## Rating data for approved types

Switching capacity			
Maximum motor rating			
Three-phase			
200 V 208 V	HP	5	
230 V 240 V	HP	5	
460 V 480 V	HP	10	
575 V 600 V	HP	15	
Single-phase			
115 V 120 V	HP	2	
230 V 240 V	HP	3	
General use		A	40
Auxiliary contacts			
Pilot Duty			
AC operated			A600
DC operated			P300
General Use			
AC	V	600	
AC	A	10	
DC	V	250	
DC	A	1	
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	10/100	
max. Fuse	A	125/70 Class J	
SCCR (CB)	kA	10/65	
max. CB	A	50/32	
600 V High Fault			
SCCR (fuse)	kA	10/100	
max. Fuse	A	125/70 Class J	
SCCR (CB)	kA	10/22	
max. CB	A	50/32	
Special Purpose Ratings			
Electrical Discharge Lamps (Ballast)			
480V 60Hz 3phase, 277V 60Hz 1phase		A	40
600V 60Hz 3phase, 347V 60Hz 1phase		A	40
Incandescent Lamps (Tungsten)			
480V 60Hz 3phase, 277V 60Hz 1phase		A	40
600V 60Hz 3phase, 347V 60Hz 1phase		A	40
Resistance Air Heating			
480V 60Hz 3phase, 277V 60Hz 1phase		A	40
600V 60Hz 3phase, 347V 60Hz 1phase		A	40
Refrigeration Control (CSA only)			
LRA 480V 60Hz 3phase		A	240
FLA 480V 60Hz 3phase		A	40
LRA 600V 60Hz 3phase		A	180
FLA 600V 60Hz 3phase		A	30
Definite Purpose Ratings (100,000 cycles acc. to UL 1995)			

LRA 480V 60Hz 3phase	A	108
FLA 480V 60Hz 3phase	A	18
Elevator Control		
200V 60Hz 3phase	HP	3
200V 60Hz 3phase	A	11
240V 60Hz 3phase	HP	3
240V 60Hz 3phase	A	9.6
480V 60Hz 3phase	HP	7.5
480V 60Hz 3phase	A	11
600V 60Hz 3phase	HP	10
600V 60Hz 3phase	A	11

## Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	$I_n$	A	18
Heat dissipation per pole, current-dependent	$P_{vid}$	W	0.7
Equipment heat dissipation, current-dependent	$P_{vid}$	W	2.1
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			
10.2.2.1 Verification of thermal stability of enclosures			
10.2.2.2 Verification of resistance of insulating materials to normal heat			
10.2.2.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects			
10.2.4 Resistance to ultra-violet (UV) radiation			
10.2.5 Lifting			
10.2.6 Mechanical impact			
10.2.7 Inscriptions			
10.3 Degree of protection of ASSEMBLIES			
10.4 Clearances and creepage distances			
10.5 Protection against electric shock			
10.6 Incorporation of switching devices and components			
10.7 Internal electrical circuits and connections			
10.8 Connections for external conductors			
10.9 Insulation properties			
10.9.2 Power-frequency electric strength			
10.9.3 Impulse withstand voltage			
10.9.4 Testing of enclosures made of insulating material			
10.10 Temperature rise			
10.11 Short-circuit rating			
10.12 Electromagnetic compatibility			
10.13 Mechanical function			

## 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 $U_s$ 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
Rated operation current Ie at AC-1, 400 V	A	40
Rated operation current Ie at AC-3, 400 V	A	18
Rated operation power at AC-3, 400 V	kW	7.5
Rated operation current Ie at AC-4, 400 V	A	10
Rated operation power at AC-4, 400 V	kW	4.5
Rated operation power NEMA	kW	7.4
Modular version		No
Number of auxiliary contacts as normally open contact		2
Number of auxiliary contacts as normally closed contact		1
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 60947-4-1; CSA - C22.2 No. 60947-4-1-14; CE marking
UL File No.		E29096
UL Category Control No.		NLDX
CSA File No.		012528
CSA Class No.		2411-03, 3211-04
North America Certification		UL listed, CSA certified
Specially designed for North America		No

## Characteristics



- 1: Overload relay
- 2: Suppressor

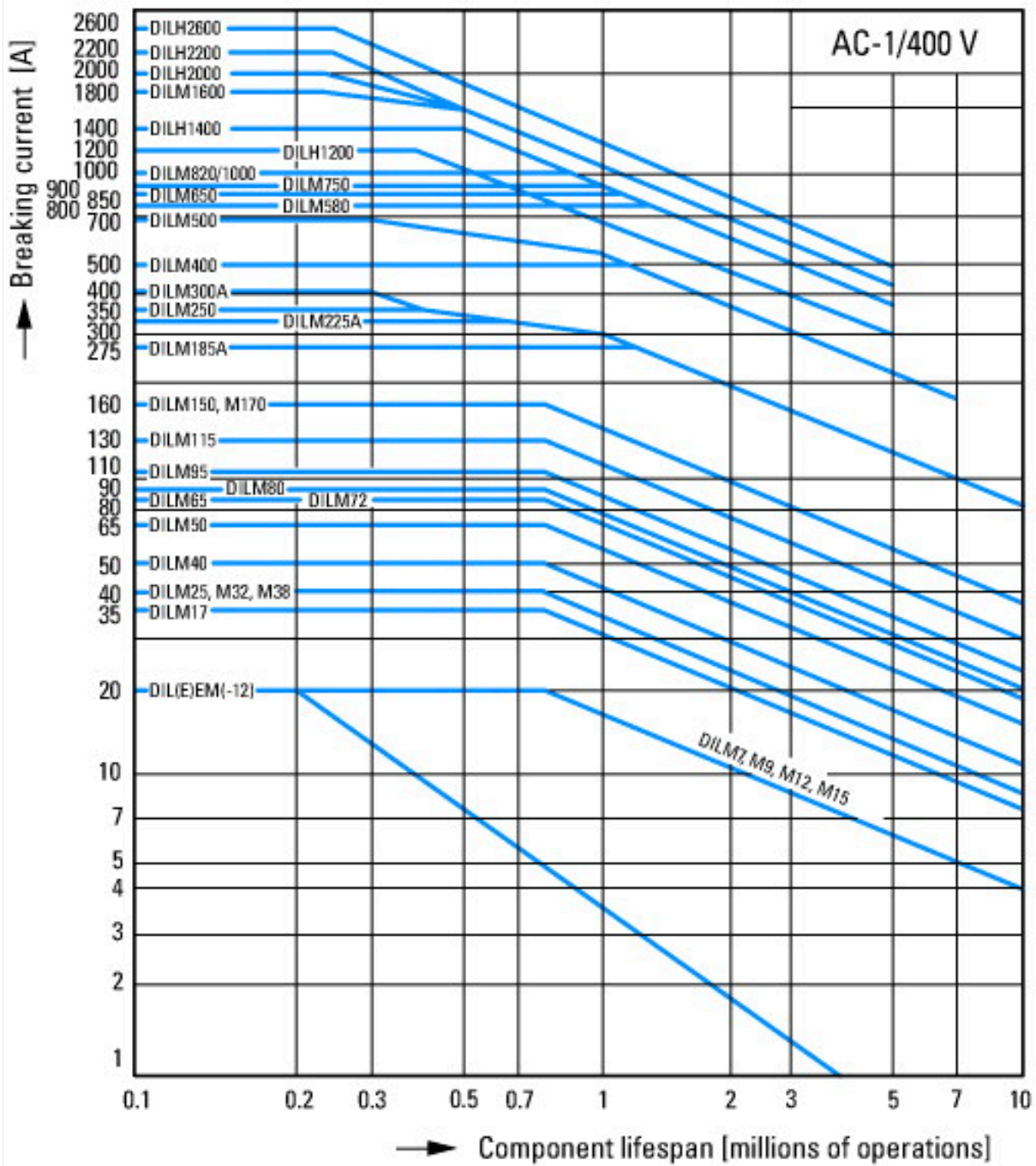




- Squirrel-cage motor
- Operating characteristics
- Starting: from rest
- Stopping: after attaining full running speed
- Electrical characteristics
- Make: up to 6 x rated motor current
- Break: up to 1 x rated motor current
- Utilization category
- 100 % AC-3
- Typical applications
- Compressors
- Lifts
- 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 conditions for 3 pole, non-motor loads  
 Operating characteristics  
 Non inductive and slightly inductive loads  
 Electrical characteristics  
 Switch on: 1 x rated operational current  
 Switch off: 1 x rated operational current  
 Utilization category  
 100 % AC-1  
 Typical examples of application  
 Electric heat



## Dimensions



Contactors with auxiliary contact module



distance at side to earthed parts: 6 mm

## Assets (links)

### Declaration of CE Conformity

00003050

### Instruction Leaflets

IL03407044Z2018\_05

## Additional product information (links)

### IL03407044Z (AWA2100-2292) Contactors, complete units

IL03407044Z (AWA2100-2292) Contactors, complete units

[ftp://ftp.moeller.net/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL03407044Z2018\\_05.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407044Z2018_05.pdf)

### MN034004 Rapid Link 5.0 RAMO RASP

MNxx3 <Title> - Deutsch

[ftp://ftp.moeller.net/DOCUMENTATION/AWB\\_MANUALS/MN034004\\_DE.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN034004_DE.pdf)

Motor starters and "Special Purpose Ratings" for the North American market

[http://www.eaton.eu/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct\\_3258146.pdf](http://www.eaton.eu/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct_3258146.pdf)

Switchgear of Power Factor Correction Systems	<a href="http://www.moeller.net/binary/ver_techpapers/ver934en.pdf">http://www.moeller.net/binary/ver_techpapers/ver934en.pdf</a>
X-Start - Modern Switching Installations Efficiently Fitted and Wired Securely	<a href="http://www.moeller.net/binary/ver_techpapers/ver938en.pdf">http://www.moeller.net/binary/ver_techpapers/ver938en.pdf</a>
Mirror Contacts for Highly-Reliable Information Relating to Safety-Related Control Functions	<a href="http://www.moeller.net/binary/ver_techpapers/ver944en.pdf">http://www.moeller.net/binary/ver_techpapers/ver944en.pdf</a>
Effect of the Cabel Capacitance of Long Control Cables on the Actuation of Contactors	<a href="http://www.moeller.net/binary/ver_techpapers/ver949en.pdf">http://www.moeller.net/binary/ver_techpapers/ver949en.pdf</a>
Switchgear for Luminaires	<a href="http://www.moeller.net/binary/ver_techpapers/ver955en.pdf">http://www.moeller.net/binary/ver_techpapers/ver955en.pdf</a>
Standard Compliant and Functionally Safe Engineering Design with Mechanical Auxiliary Contacts	<a href="http://www.moeller.net/binary/ver_techpapers/ver956en.pdf">http://www.moeller.net/binary/ver_techpapers/ver956en.pdf</a>
The Interaction of Contactors with PLCs	<a href="http://www.moeller.net/binary/ver_techpapers/ver957en.pdf">http://www.moeller.net/binary/ver_techpapers/ver957en.pdf</a>
Busbar Component Adapters for modern Industrial control panels	<a href="http://www.moeller.net/binary/ver_techpapers/ver960en.pdf">http://www.moeller.net/binary/ver_techpapers/ver960en.pdf</a>