

DATASHEET - DILM38-01(110V50HZ,120V60HZ)



Contactors, 3 pole, 380 V 400 V 18.5 kW, 1 NC, 110 V 50 Hz, 120 V 60 Hz, AC operation, Screw terminals

Part no. DILM38-01(110V50HZ,120V60HZ)
Catalog No. 112453
Alternate Catalog No. XTCE038C01A
EL-Nummer (Norway) 4110206

Delivery program

Product range		Contactors
Application		Contactors for Motors
Subrange		Contactors up to 170 A, 3 pole
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
Notes		Not suitable for motors with efficiency class IE3.
Connection technique		Screw terminals
Number of poles		3 pole

Rated operational current

AC-3			
Notes			At maximum permissible ambient temperature (open.)
380 V 400 V	I_e	A	38
AC-1			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	$I_{th} = I_e$	A	45
enclosed	I_{th}	A	36
Conventional free air thermal current, 1 pole			
open	I_{th}	A	100
enclosed	I_{th}	A	90

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

AC-3			
220 V 230 V	P	kW	11
380 V 400 V	P	kW	18.5
660 V 690 V	P	kW	21
AC-4			
220 V 230 V	P	kW	4
380 V 400 V	P	kW	7
660 V 690 V	P	kW	10

Contacts

N/C = Normally closed		1 NC
-----------------------	--	------

Contact sequence			
------------------	--	--	--

Instructions	Contacts to EN 50 012. with mirror contact.		
Can be combined with auxiliary contact	DILA-XHI(V)..		
Actuating voltage	110 V 50 Hz, 120 V 60 Hz		
Voltage AC/DC	AC operation		
Connection to SmartWire-DT	no		

Technical data

General		
Standards		IEC/EN 60947, VDE 0660, UL, CSA

Lifespan, mechanical			
AC operated	Operations	$\times 10^6$	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
Altitude			
		m	Max. 2000
Weight			
AC operated		kg	0.428
Screw connector terminals			
Terminal capacity main cable			
Solid		mm ²	1 x (0.75 - 16) 2 x (0.75 - 10)
Flexible with ferrule		mm ²	1 x (0.75 - 16) 2 x (0.75 - 10)
Stranded		mm ²	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 ²	1 x (0.75 - 4) 2 x (0.75 - 2.5)
Flexible with ferrule		mm ²	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	384
Breaking capacity			
220 V 230 V		A	320
380 V 400 V		A	320
500 V		A	320
660 V 690 V		A	180
Short-circuit rating			
Short-circuit protection maximum fuse			
Type "2" coordination			
400 V	gG/gL 500 V	A	63
690 V	gG/gL 690 V	A	35
Type "1" coordination			
400 V	gG/gL 500 V	A	125
690 V	gG/gL 690 V	A	63

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 50 °C	$I_{th} = I_e$	A	43
at 55 °C	$I_{th} = I_e$	A	42
at 60 °C	$I_{th} = I_e$	A	40
enclosed	I_{th}	A	36
Conventional free air thermal current, 1 pole			
open	I_{th}	A	100
enclosed	I_{th}	A	90
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	38
240 V	I_e	A	38
380 V 400 V	I_e	A	38
415 V	I_e	A	38
440V	I_e	A	38
500 V	I_e	A	38
660 V 690 V	I_e	A	22.5
380 V 400 V	I_e	A	38
Motor rating	P	kWh	
220 V 230 V	P	kW	11

240 V	P	kW	12
380 V 400 V	P	kW	18.5
415 V	P	kW	20
440 V	P	kW	21
500 V	P	kW	24
660 V 690 V	P	kW	21
AC-4			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	I_e	A	15
240 V	I_e	A	15
380 V 400 V	I_e	A	15
415 V	I_e	A	15
440 V	I_e	A	15
500 V	I_e	A	15
660 V 690 V	I_e	A	12
Motor rating			
220 V 230 V	P	kW	4
240 V	P	kW	4.5
380 V 400 V	P	kW	7
415 V	P	kW	7.5
440 V	P	kW	8
500 V	P	kW	9
660 V 690 V	P	kW	10

DC

Rated operational current, open			
DC-1			
60 V	I_e	A	40
110 V	I_e	A	40
220 V	I_e	A	40

Current heat loss

3 pole, at I_{th} (60°)		W	10.3
Current heat loss at I_e to AC-3/400 V		W	9.3
Impedance per pole		mΩ	2.7

Magnet systems

Voltage tolerance			
AC operated	Pick-up	$x U_c$	0.8 - 1.1
Drop-out voltage AC operated	Drop-out	$x U_c$	0.3 - 0.6
Power consumption of the coil in a cold state and 1.0 x U_S			
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
Duty factor		% DF	100
Changeover time at 100 % U_S (recommended value)			
Main contacts			
AC operated			
Closing delay		ms	16 - 22
Opening delay		ms	8 - 14
Arcing time		ms	10

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	10	
230 V 240 V	HP	10	
460 V 480 V	HP	20	
575 V 600 V	HP	25	
Single-phase			
115 V 120 V	HP	2	
230 V 240 V	HP	5	
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			
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	125/125 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	192
FLA 480V 60Hz 3phase	A	32
Elevator Control		
200V 60Hz 3phase	HP	7.5
200V 60Hz 3phase	A	25.3
240V 60Hz 3phase	HP	7.5
240V 60Hz 3phase	A	22
480V 60Hz 3phase	HP	20
480V 60Hz 3phase	A	27
600V 60Hz 3phase	HP	20
600V 60Hz 3phase	A	22

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	38
Heat dissipation per pole, current-dependent	P_{vid}	W	3.1
Equipment heat dissipation, current-dependent	P_{vid}	W	9.3
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			
10.2.3.1 Verification of thermal stability of enclosures			
10.2.3.2 Verification of resistance of insulating materials to normal heat			
10.2.3.3 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	110 - 110	
Rated control supply voltage U_s at AC 60HZ	V	120 - 120	
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	45
Rated operation current Ie at AC-3, 400 V	A	38
Rated operation power at AC-3, 400 V	kW	18.5
Rated operation current Ie at AC-4, 400 V	A	15
Rated operation power at AC-4, 400 V	kW	7
Rated operation power NEMA	kW	14.9
Modular version		No
Number of auxiliary contacts as normally open contact		0
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
- 3: Auxiliary contact modules



- 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

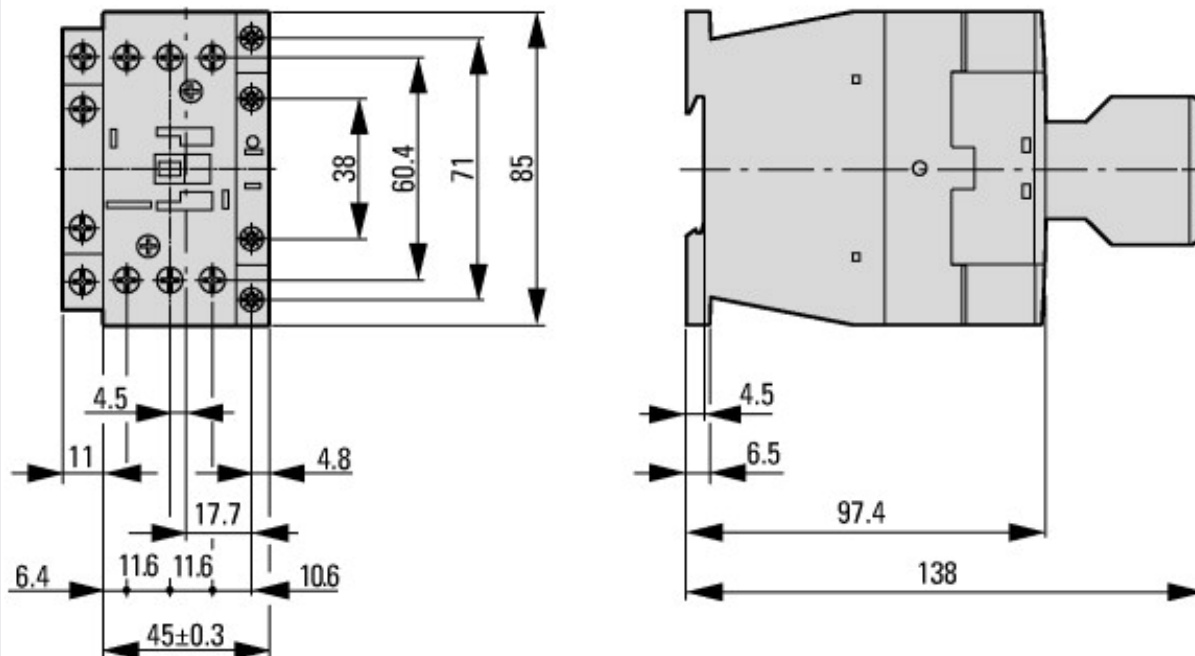


- Extreme switching duty
- Squirrel-cage motor
- Operating characteristics
- Inching, plugging, reversing
- Electrical characteristics
- Make: up to 6 x rated motor current
- Break: up to 6 x rated motor current
- Utilization category
- 100 % AC-4
- Typical applications
- Printing presses
- Wire-drawing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

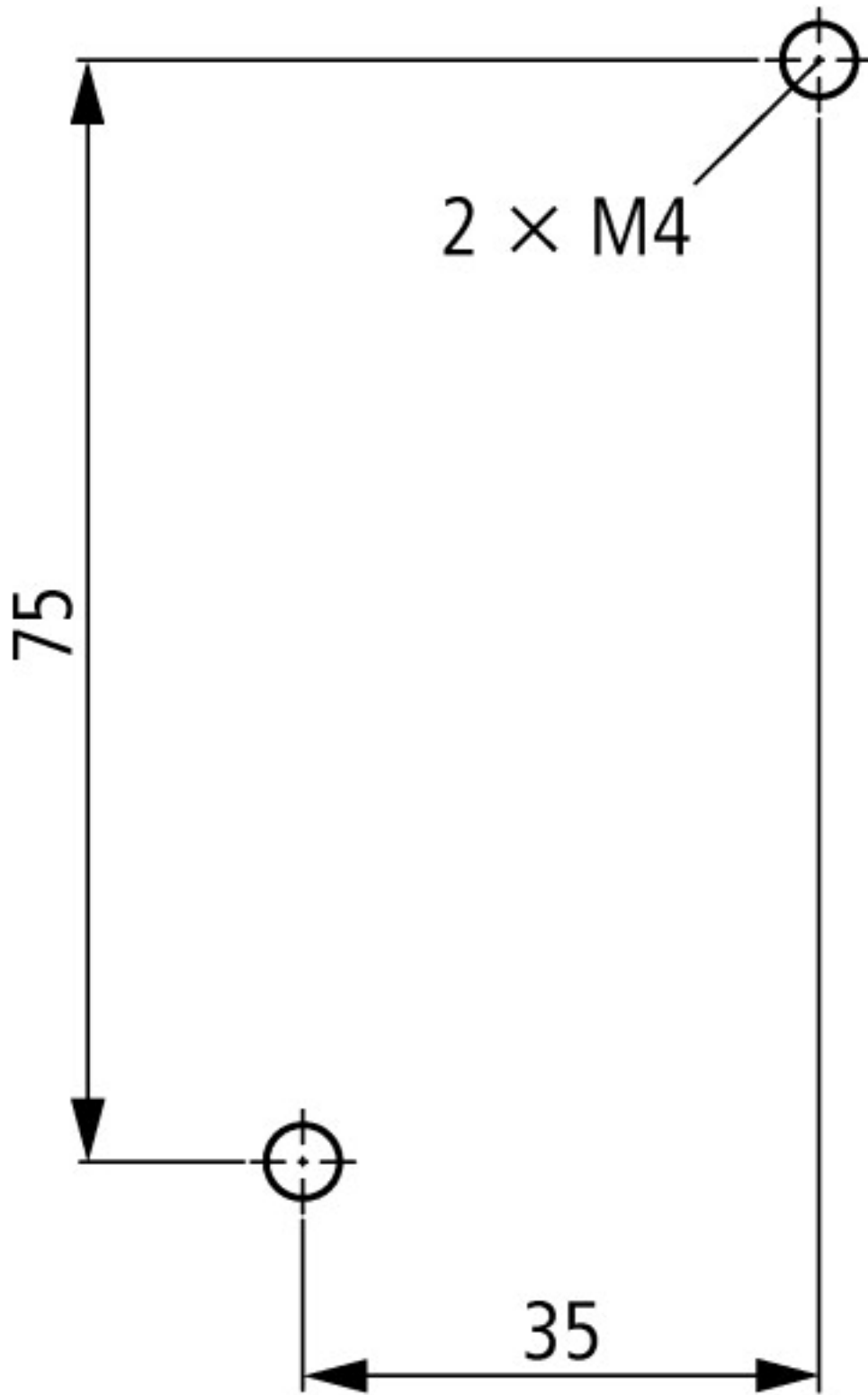


Switching conditions for non-motor consumers, 3 pole, 4 pole
 Operating characteristics
 Non inductive and slightly inductive loads
 Electrical characteristics
 Switch on: 1 x rated operational current
 Switch off: 1 x rated operational current
 Utilization category
 100 % AC-1
 Typical examples of application
 Electric heat

Dimensions



Contacteur with auxiliary contact module



distance at side to earthed parts: 6 mm



SCATTERGOOD & JOHNSON LTD

ELECTRICAL ENGINEERING & FLUID CONTROL DISTRIBUTORS

Est.1899

At Scattergood & Johnson Ltd, we pride ourselves on being a technical distributor to specialist industries.

Working with a range of quality product suppliers across a number of specialist markets, we are not your average 'box shifter' - we are your technical and supply chain partner.

We fully support every product we sell - for free! Our internal team and external sales engineers can answer any product or application question, no matter the complexity.

Backing up this technical ability is a range of 50,000+ products available from stock for nationwide next day delivery (same day if required!), or you can collect what you need from any of our trade counters around the UK.

Select your specialist interest below to learn more about how we can help.



Online, In Branch and On the Road - Scattergood & Johnson Ltd, there when you need us.

www.scatts.co.uk