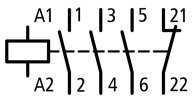
Contactor,5,5kW/400V,DC-operated

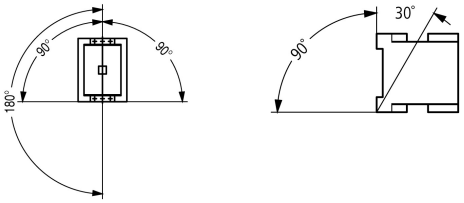
Part no. **DILM12-01(24VDC)**

Article no. **276880**

Delivery programme

Connection technique			Screw terminals
Actuating voltage			24 V DC
Voltage AC/DC			DC operation
			3 pole
Rated operational current			
AC-3			
380 V 400 V	I_e	A	12
Max. rating for three-phase motors, 50 – 60 Hz			
AC-3			
220 V 230 V	*P*	kW	3.5
380 V 400 V	*P*	kW	5.5
660 V 690 V	*P*	kW	6.5
AC-4			
220 V 230 V	*P*	kW	2
380 V 400 V	*P*	kW	3
660 V 690 V	*P*	kW	4.4
Conventional free air thermal current $I_{th} = I_e$ AC-1 at 60 °C			
Open	$I_{th} = I_e$	A	20
Contacts			
N/C = Normally closed			1 N/C
Contact sequence			
Can be combined with auxiliary contact			DILA-XHI(V)..

General

Standards			IEC/EN 60947, VDE 0660, UL, CSA
Lifespan, mechanical			
AC operated	Operations	$\times 10^6$	10
DC operated	Operations	$\times 10^6$	10
Operating frequency, mechanical			
AC operated	Operations/h		9000
DC operated	Operations/h		9000
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclical, to IEC 60068-2-30
Ambient temperature		°C	
Open		°C	– 25 … 60
Enclosed		°C	- 25 … 40
Storage		°C	– 40 - 80
Mounting position, AC- and DC operated			
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	5.7
Auxiliary contacts		
N/O contact	g	3.4
N/C contact	g	3.4
Protection type		IP20
Protection against direct contact when actuated from front (IEC 536)		Finger- and back-of-hand proof
Weight		
AC operated	kg	0.23
DC operated	kg	0.28
Terminal capacity main cable		
Solid	mm^2	1 × (0.75 – 4) 2 × (0.75 – 2.5)
Flexible with ferrule	mm^2	1 × (0.75 – 2.5) 2 × (0.75 – 2,5)
Solid or stranded	AWG	18 – 10
Main cable connection screw/bolt		M3.5
Tightening torque	Nm	1.2
Terminal capacity control circuit cables		
Solid	mm^2	1 × (0.75 – 4) 2 × (0.75 – 2.5)
Flexible with ferrule	mm^2	1 × (0.75 – 1.5) 2 × (0.75 – 1.5)
Solid or stranded	AWG	18 – 10
Control circuit cable connection screw/bolt		M3.5
Tightening torque	Nm	1.2
Tool		
Main cable		
Pozidriv screwdriver	Size	2
Standard screwdriver	mm	0.8 × 5.5 1 × 6
Control circuit cables		
Pozidriv screwdriver	Size	2
Standard screwdriver	mm	0.8 × 5.5 1 × 6
Terminal capacity main cable		
Solid	mm^2	1 × (0.75 – 2.5) 2 × (0.75 – 2.5)
flexible	mm^2	1 × (0.75 – 2.5) 2 × (0.75 – 2.5)
flexible with ferrules	mm^2	1 × (0.75 – 1.5) 2 × (0.75 – 1.5)
Solid or stranded	AWG	18 – 14
Terminal capacity control circuit cables		
Solid	mm^2	1 × (0.75 – 2.5) 2 × (0.75 – 2.5)
Flexible	mm^2	1 × (0.75 – 1.5) 2 × (0.75 – 1.5)
Flexible with ferrule	mm^2	1 × (0.75 – 1.5) 2 × (0.75 – 1.5)
Solid or stranded	AWG	18 – 14
Tool		

Stripping length		mm	10
Screwdriver blade width		mm	3.5

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 VDE 0106 Part 101 and Part 101/A1			
between coil and contacts		V AC	400
between the contacts		V AC	400
Making capacity (p.f. to IEC/EN 60947)			
	Up to 690 V	A	144
Breaking capacity			
230 V		A	120
380/400 V		A	120
500 V		A	100
660/690 V		A	70
Short-circuit rating			
Short-circuit protection maximum fuse			
Type “2” coordination			
400 V	gG/gL 500 V	A	20
690 V	gG/gL 690 V	A	20
Type “1” coordination			
400 V	gG/gL 500 V	A	35
690 V	gG/gL 690 V	A	25

AC

AC-1 duty			
conv. therm. current 3 pole 50 – 60 Hz			
open			
at 40 °C	I_{th}	A	22
at 50 °C	I_{th}	A	21
at 55 °C	I_{th}	A	21
at 60 °C	I_{th}	A	20
enclosed	I_{th}	A	18
Conventional free air thermal current, 1 pole			
open	I_{th}	A	50
enclosed	I_{th}	A	45
AC-3 duty			
Rated operational current AC-3 open, 50 – 60 Hz, 3 pole	I_e		
230 V	I_e	A	12
240 V	I_e	A	12
380/400 V	I_e	A	12
415 V	I_e	A	12
440V	I_e	A	12
500 V	I_e	A	10
660/690 V	I_e	A	7
Motor rating	*P*	*P*	
230 V	*P*	kW	3.5
240V	*P*	kW	4
380/400 V	*P*	kW	5.5
415 V	*P*	kW	7
440 V	*P*	kW	7.5
500 V	*P*	kW	7
660/690 V	*P*	kW	6.5

AC-4 duty			
Rated operational current AC-4 open, 50 – 60 Hz, 3 pole	I_e		
230 V	I_e	A	7
240 V	I_e	A	7
380/400 V	I_e	A	7
415 V	I_e	A	7
440 V	I_e	A	7
500 V	I_e	A	6
660/690 V	I_e	A	5
Motor rating	P	P	
230 V	P	kW	2
240 V	P	kW	2.2
380/400 V	P	kW	3
415 V	P	kW	3.4
440 V	P	kW	3.6
500 V	P	kW	3.5
660/690 V	P	kW	4.4

DC

Rated operational current, open			
DC-1 operation			
60 V	I_e	A	20
110 V	I_e	A	20
220 V	I_e	A	15
440 V	I_e	A	1.3
DC-3 operation			
60 V	I_e	A	20
110 V	I_e	A	20
220 V	I_e	A	1.5
440 V	I_e	A	0.2
DC-5 operation			
60 V	I_e	A	20
110 V	I_e	A	20
220 V	I_e	A	1.5
440 V	I_e	A	0.2

Current heat loss (3 pole)

Current heat loss at $\mathbf{I}_{th}$		W	3
Current heat loss at I_e to AC-3/400 V		W	1.1
Impedance per pole		mΩ	2.5

Magnet systems

Voltage tolerance		× U_c	
AC operated	Pick-up	× U_c	0.8 … 1.1
Drop-out voltage AC operated	Drop-out	× U_c	0.3 … 0.6
DC operated	Pick-up	× U_c	0.8 … 1.1
DC operated	Drop-out	× U_c	0.15 … 0.6
Power consumption of the coil in a cold state and 1.0 × U_c			
50 Hz	Pick-up	VA	24
50 Hz	Sealing	VA	3.4
50 Hz	Sealing	W	1.2
60 Hz	Pick-up	VA	30
60 Hz	Sealing	VA	4.4
60 Hz	Sealing	W	1.4
50/60 Hz	Pick-up	VA	27 25
50/60 Hz	Sealing	VA	4.2

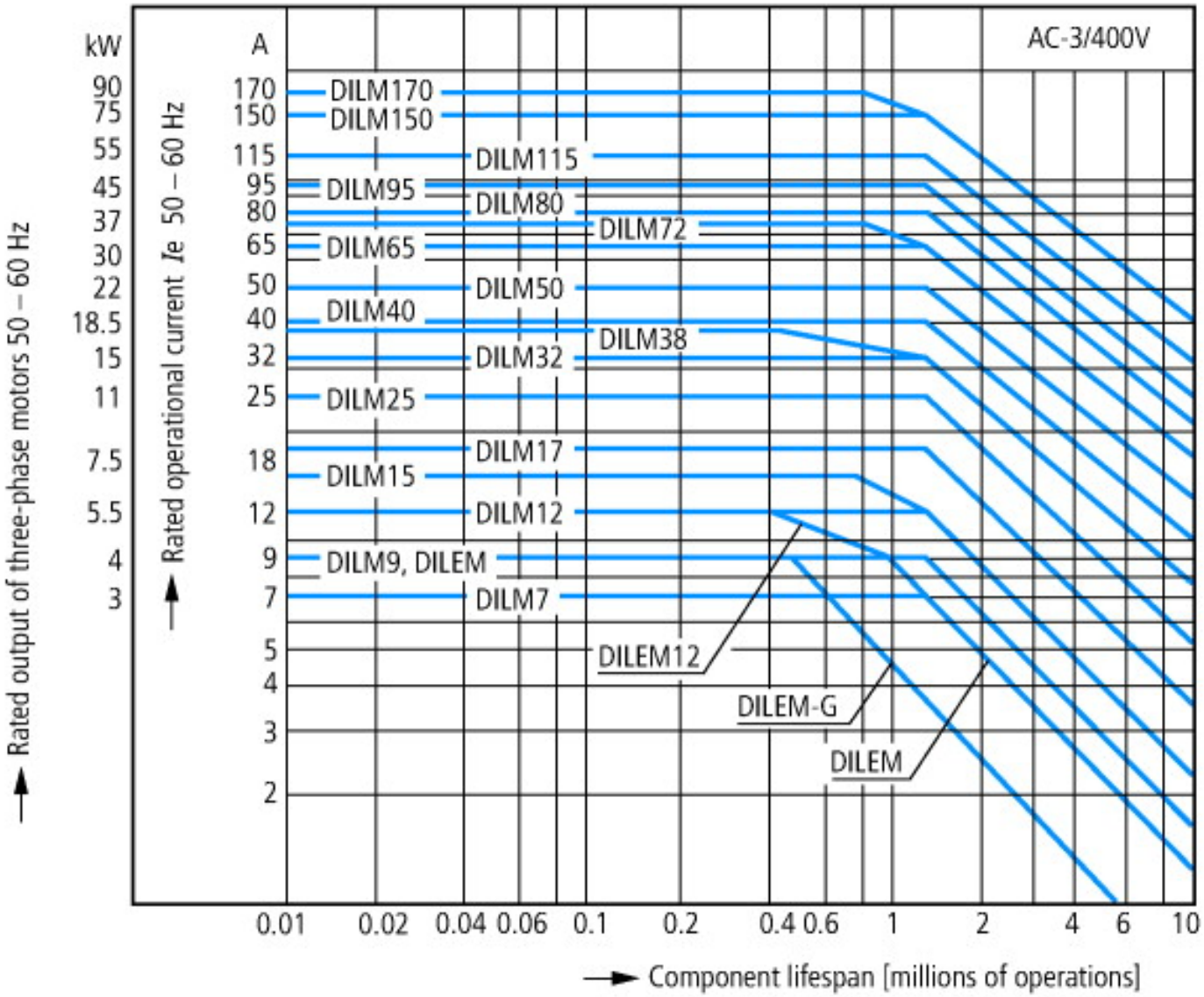
			3.3
50/60 Hz	Sealing	W	1.4 1.2
DC operated	Pick-up	W	4.5
DC operated	Sealing	W	4.5
Duty factor		% DF	100
Switching times at 100 % U_c (approximate values)			
Main contacts			
AC operated			
Closing delay		ms	15 … 21
Opening delay		ms	9 … 18
DC operated		ms	
Closing delay		ms	31
Opening delay		ms	12
Arcing time		ms	10
Lifespan, mechanical; Coil 50/60 Hz	at 50 Hz		Mechanical lifespan at 50 Hz approx. 30% lower than under “Technical data, general”

Electromagnetic compatibility (EMC)

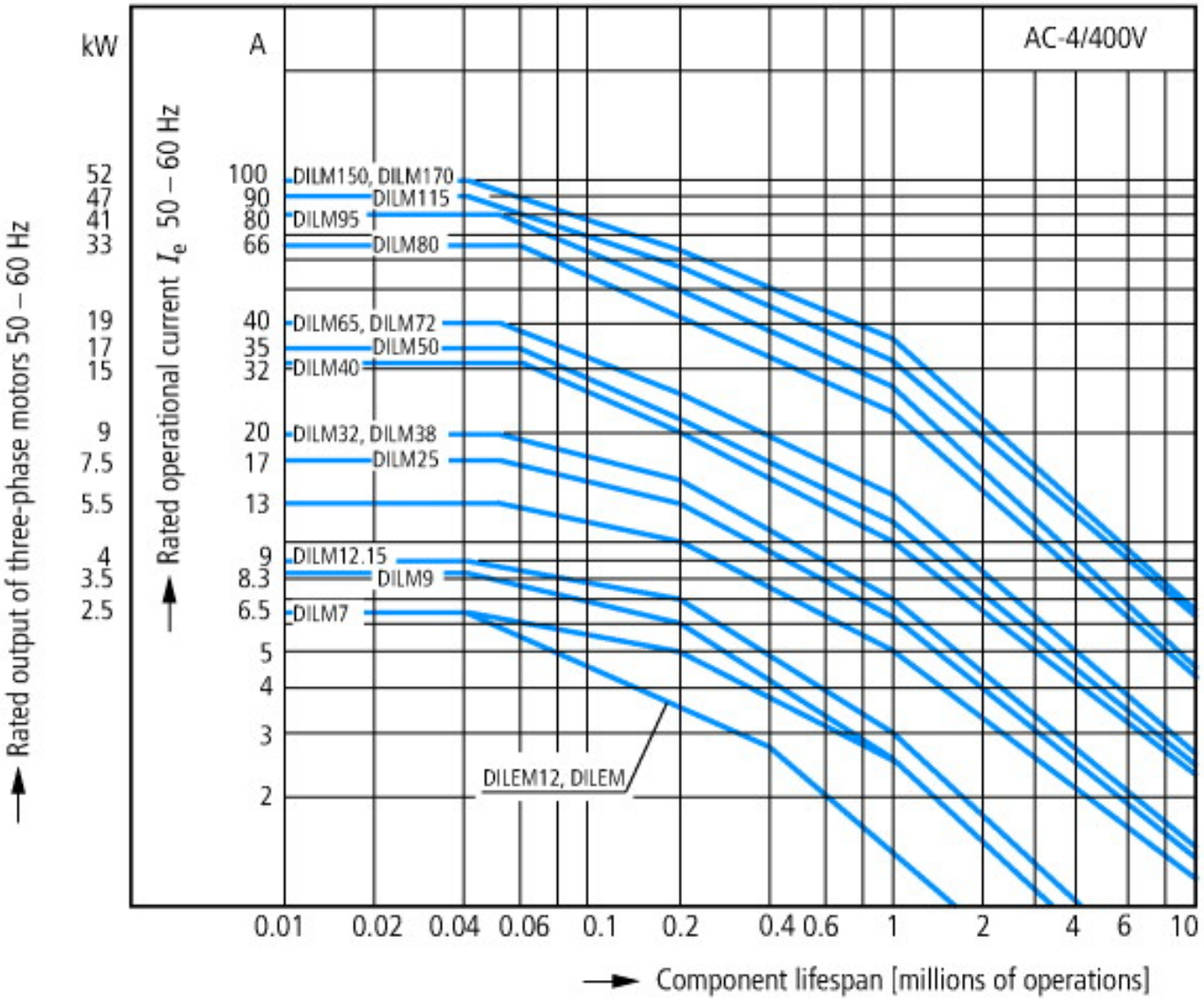
Emitted interference			to EN 60947-1
Interference immunity			to EN 60947-1

Notes

Notes The following applies to magnet systems, voltage tolerance, pickup voltage DC-operated DILM17 – DILM32:
RDC 24 (U_{min} 24 V DC/U_{max} 27 V DC)
RDC 60 (U_{min} 48 V DC/U_{max} 60 V DC)
RDC 130 (U_{min} 110 V DC/U_{max} 130 V DC)
RDC 240 (U_{min} 200 V DC/U_{max} 240 V DC)
Example:
$U_c = 0.7 \times U_{min} - 1.2 \times U_{max}$
$U_c = 0.7 \times 24\ V - 1.2 \times 27\ V\ DC$
With voltage tolerance and DC operated power consumption the following applies: At least smoothed double-pulse bridge rectification or a three-phase current rectifier is necessary

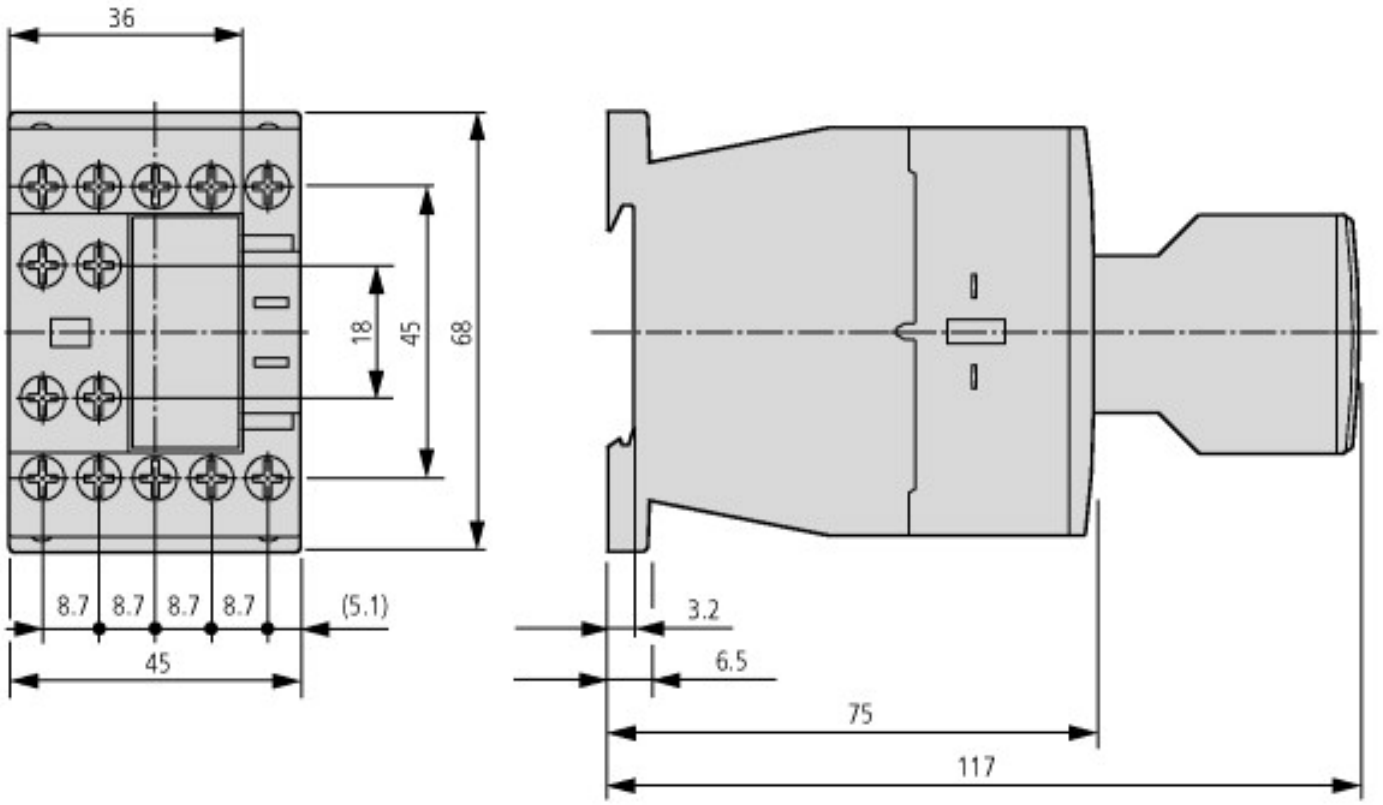


Squirrel-cage motor
Operating characteristics
Starting:from rest
Stopping:after attaining full running speed
Electrical characteristics
Make: up to 6 × rated motor current
Break: up to 1 × rated motor current
Utilization category
100 % AC-3
Typical applications
Compressors
Lifts
Mixers
Pumps
Escalators
Agitators
Fans
Conveyor belts
Centrifuges
Hinged flaps
Bucket-elevators
Air conditioning system
General drives in manufacturing and processing machines

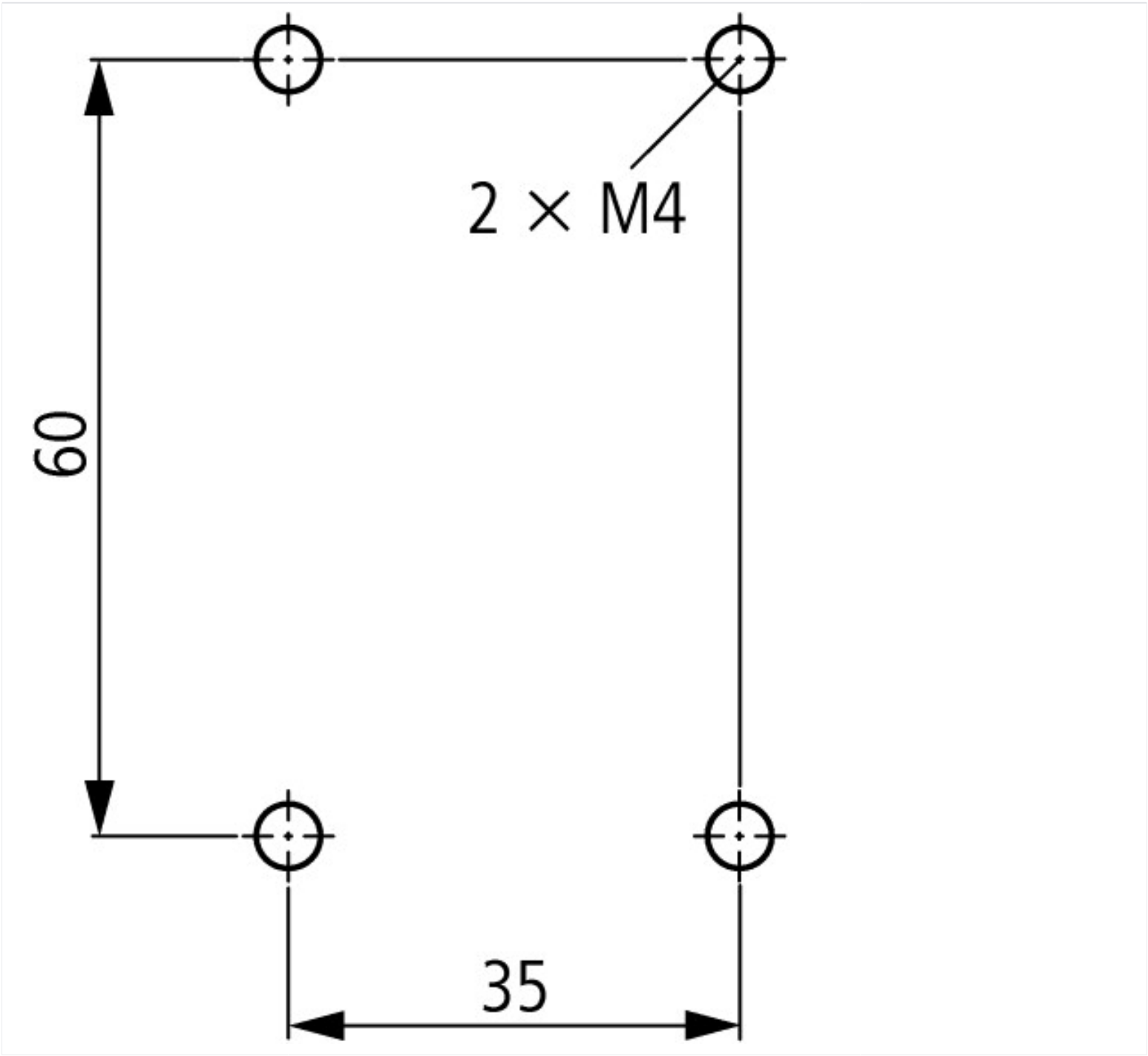


Extreme switching duty
Squirrel-cage motor
Operating characteristics
Inching, plugging, reversing
Electrical characteristics
Make: up to 6 × rated motor current
Break: up to 6 × rated motor current
Utilization category
100 % AC-4
Typical applications
Printing presses
Wire-drawing machines
Centrifuges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

Dimensions



Contactor with auxiliary contact module



Additional product information (links)

Installation instructions

AWA2100-2126 Contactors	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/21261207.pdf