



**Safety contactor, 380 V 400 V: 30 kW, 2 N/O, 2 NC, RDC 24: 24 - 27 V DC, DC operation, Screw terminals, integrated suppressor circuit in actuating electronics**



**Part no. DILMS65-22(RDC24)**  
**Catalog No. 191715**  
**Alternate Catalog No. XTSE065D22TD**

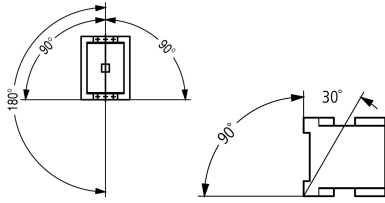
Similar to illustration

### Delivery program

Product range				Safety contactors
Application				Contactors for Motors
Subrange				Complete devices up to 170 A
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
Connection technique				Screw terminals
Notes				Also suitable for motors with efficiency class IE3. Also tested according to AC-3e.
Description				Auxiliary contact element connected non-detachably with basic device (manual activation not possible).
<b>Rated operational current</b>				
AC-3				
380 V 400 V	$I_e$	A		65
AC-1				
Conventional free air thermal current, 3 pole, 50 - 60 Hz				
Open				
at 40 °C	$I_{th} = I_e$	A		98
enclosed	$I_{th}$	A		72
Conventional free air thermal current, 1 pole				
open	$I_{th}$	A		200
enclosed	$I_{th}$	A		180
<b>Max. rating for three-phase motors, 50 - 60 Hz</b>				
AC-3				
220 V 230 V	P	kW		20
380 V 400 V	P	kW		30
660 V 690 V	P	kW		35
AC-4				
220 V 230 V	P	kW		7
380 V 400 V	P	kW		12
660 V 690 V	P	kW		17
<b>Contacts</b>				
N/O = Normally open				2 N/O
N/C = Normally closed				2 NC
<b>Instructions</b>				
				Contacts to EN 50 012. integrated suppressor circuit in actuating electronics with mirror contact.
Contact sequence				
Actuating voltage				RDC 24: 24 - 27 V DC
Voltage AC/DC				DC operation

# Technical data

## General

Standards			IEC/EN 60947, VDE 0660, UL, CSA
Lifespan, mechanical			
DC operated	Operations	x 10 <sup>6</sup>	10
Operating frequency, mechanical			
DC 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	10
Auxiliary contacts			
N/O contact		g	7
N/C contact		g	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			
DC operated		kg	1.082
Screw connector terminals			
Terminal capacity main cable			
Solid		mm <sup>2</sup>	1 x (0.75 - 16) 2 x (0.75 - 16)
Flexible with ferrule		mm <sup>2</sup>	1 x (0.75 - 35) 2 x (0.75 - 25)
Stranded		mm <sup>2</sup>	1 x (16 - 50) 2 x (16 - 35)
Solid or stranded		AWG	single 14 - 1, double 14 - 2
Flat conductor	Lamellenzahl x Breite x Dicke	mm	2 x (6 x 9 x 0.8)
Stripping length		mm	14
Terminal screw			M6
Tightening torque		Nm	3.3
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)			
	Up to 690 V	A	910
Breaking capacity			
220 V 230 V		A	650
380 V 400 V		A	650
500 V		A	650
660 V 690 V		A	370
Short-circuit rating			
Short-circuit protection maximum fuse			
Type "2" coordination			
400 V	gG/gL 500 V	A	125
690 V	gG/gL 690 V	A	80
Type "1" coordination			
400 V	gG/gL 500 V	A	250
690 V	gG/gL 690 V	A	100

### 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	98
at 50 °C	$I_{th} = I_e$	A	88
at 55 °C	$I_{th} = I_e$	A	83
at 60 °C	$I_{th} = I_e$	A	80
enclosed	$I_{th}$	A	72
Conventional free air thermal current, 1 pole			
open	$I_{th}$	A	200
enclosed	$I_{th}$	A	180
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	$I_e$	A	65
240 V	$I_e$	A	65
380 V 400 V	$I_e$	A	65

415 V	I <sub>e</sub>	A	65
440V	I <sub>e</sub>	A	65
500 V	I <sub>e</sub>	A	65
660 V 690 V	I <sub>e</sub>	A	37
Motor rating	P	kWh	
220 V 230 V	P	kW	20
240V	P	kW	22
380 V 400 V	P	kW	30
415 V	P	kW	39
440 V	P	kW	41
500 V	P	kW	47
660 V 690 V	P	kW	35
AC-4			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	I <sub>e</sub>	A	25
240 V	I <sub>e</sub>	A	25
380 V 400 V	I <sub>e</sub>	A	25
415 V	I <sub>e</sub>	A	25
440 V	I <sub>e</sub>	A	25
500 V	I <sub>e</sub>	A	25
660 V 690 V	I <sub>e</sub>	A	20
Motor rating	P	kWh	
220 V 230 V	P	kW	7
240 V	P	kW	7.5
380 V 400 V	P	kW	12
415 V	P	kW	13
440 V	P	kW	14
500 V	P	kW	16
660 V 690 V	P	kW	17
<b>DC</b>			
Rated operational current, open			
DC-1			
60 V	I <sub>e</sub>	A	72
110 V	I <sub>e</sub>	A	72
220 V	I <sub>e</sub>	A	65
<b>Current heat loss</b>			
3 pole, at I <sub>th</sub> (60°)		W	25.9
Current heat loss at I <sub>e</sub> to AC-3/400 V		W	17.1
Impedance per pole		mΩ	1.9
<b>Magnet systems</b>			
Voltage tolerance			
DC operated	Pick-up	x U <sub>c</sub>	0.7 - 1.2
DC operated	Drop-out	x U <sub>c</sub>	0.15 - 0.6
Notes			at least smoothed two-phase bridge rectifier or three-phase rectifier
Power consumption of the coil in a cold state and 1.0 x U <sub>S</sub>			
DC operated	Pick-up	W	24
DC operated	Sealing	W	1
Duty factor		% DF	100
Changeover time at 100 % U <sub>S</sub> (recommended value)			
Main contacts			
DC operated		ms	
Closing delay		ms	
Closing delay		ms	54
Opening delay		ms	

Opening delay	ms	24
Arcing time	ms	10
<b>Electromagnetic compatibility (EMC)</b>		
Emitted interference		according to EN 60947-1
Interference immunity		according to EN 60947-1
<b>Rating data for approved types</b>		
Switching capacity		
Maximum motor rating		
Three-phase		
200 V 208 V	HP	20
230 V 240 V	HP	25
460 V 480 V	HP	50
575 V 600 V	HP	60
Single-phase		
115 V 120 V	HP	5
230 V 240 V	HP	15
General use	A	88
Auxiliary contacts		
Pilot Duty		
AC operated		A600
DC operated		P300
General Use		
AC	V	600
AC	A	15
DC	V	250
DC	A	1
Short Circuit Current Rating		
Basic Rating		
SCCR	kA	10
max. Fuse	A	250
max. CB	A	250
480 V High Fault		
SCCR (fuse)	kA	30/100
max. Fuse	A	250/150 Class J
SCCR (CB)	kA	65
max. CB	A	100
600 V High Fault		
SCCR (fuse)	kA	30/100
max. Fuse	A	250/150 Class J
SCCR (CB)	kA	30
max. CB	A	250
Special Purpose Ratings		
Electrical Discharge Lamps (Ballast)		
480V 60Hz 3phase, 277V 60Hz 1phase	A	88
600V 60Hz 3phase, 347V 60Hz 1phase	A	88
Incandescent Lamps (Tungsten)		
480V 60Hz 3phase, 277V 60Hz 1phase	A	88
600V 60Hz 3phase, 347V 60Hz 1phase	A	88
Resistance Air Heating		
480V 60Hz 3phase, 277V 60Hz 1phase	A	88
600V 60Hz 3phase, 347V 60Hz 1phase	A	88
Definite Purpose Ratings (100,000 cycles acc. to UL 1995)		

LRA 480V 60Hz 3phase	A	390
FLA 480V 60Hz 3phase	A	65
Elevator Control		
200V 60Hz 3phase	HP	10
200V 60Hz 3phase	A	32.2
240V 60Hz 3phase	HP	15
240V 60Hz 3phase	A	42
480V 60Hz 3phase	HP	30
480V 60Hz 3phase	A	40
600V 60Hz 3phase	HP	40
600V 60Hz 3phase	A	41

## Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	$I_n$	A	65
Heat dissipation per pole, current-dependent	$P_{vid}$	W	5.7
Equipment heat dissipation, current-dependent	$P_{vid}$	W	17.1
Static heat dissipation, non-current-dependent	$P_{vs}$	W	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			

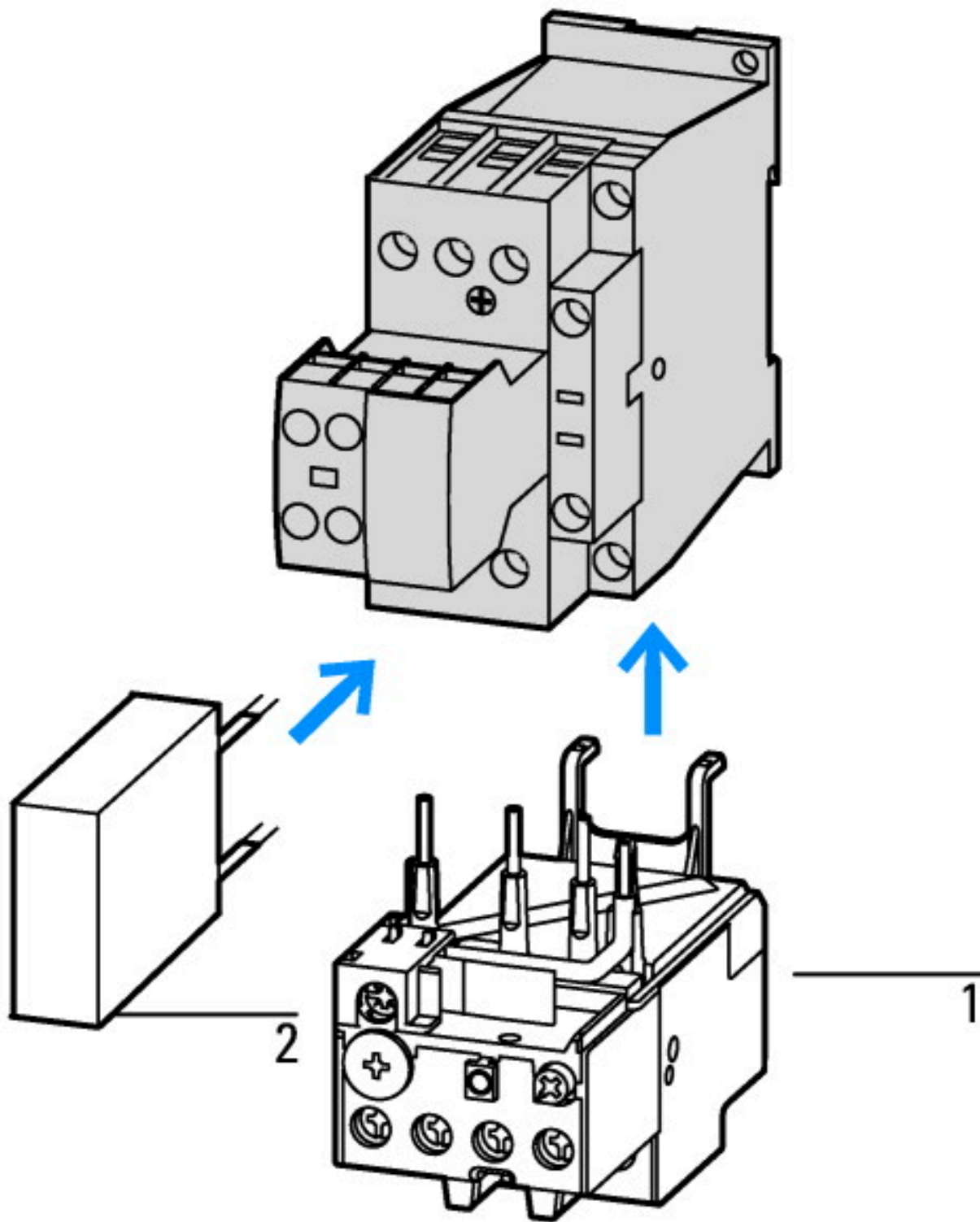
## Technical data ETIM 7.0

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		0 - 0
Rated control supply voltage $U_s$ at AC 60HZ	V		0 - 0
Rated control supply voltage $U_s$ at DC	V		24 - 24

Voltage type for actuating		DC
Rated operation current Ie at AC-1, 400 V	A	98
Rated operation current Ie at AC-3, 400 V	A	65
Rated operation power at AC-3, 400 V	kW	30
Rated operation current Ie at AC-4, 400 V	A	25
Rated operation power at AC-4, 400 V	kW	12
Rated operation power NEMA	kW	37
Modular version		No
Number of auxiliary contacts as normally open contact		2
Number of auxiliary contacts as normally closed contact		2
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



- 1: Overload relay
- 2: Suppressor





Normal AC induction motor  
 Operating characteristics  
 Switch on: from stop  
 Switch off: during run  
 Electrical characteristics:  
 Switch on: up to 6 x Rated motor current  
 Switch off: up to 1 x Rated motor current  
 Utility category



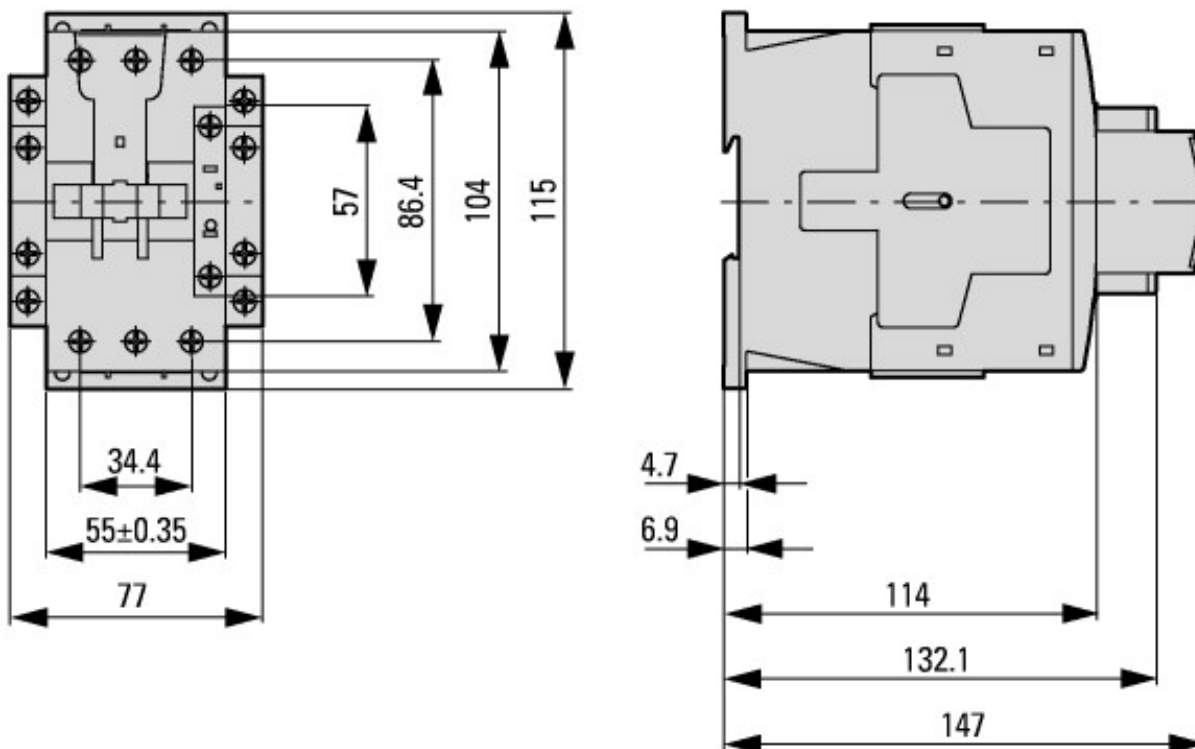
Extreme switching duty  
 Normal AC induction motor  
 Operating characteristics  
 Inching, plugging, reversing  
 Electrical characteristics:  
 Switch on: up to 6 x Rated motor current  
 Switch off: up to 6 x Rated motor current  
 Utilization



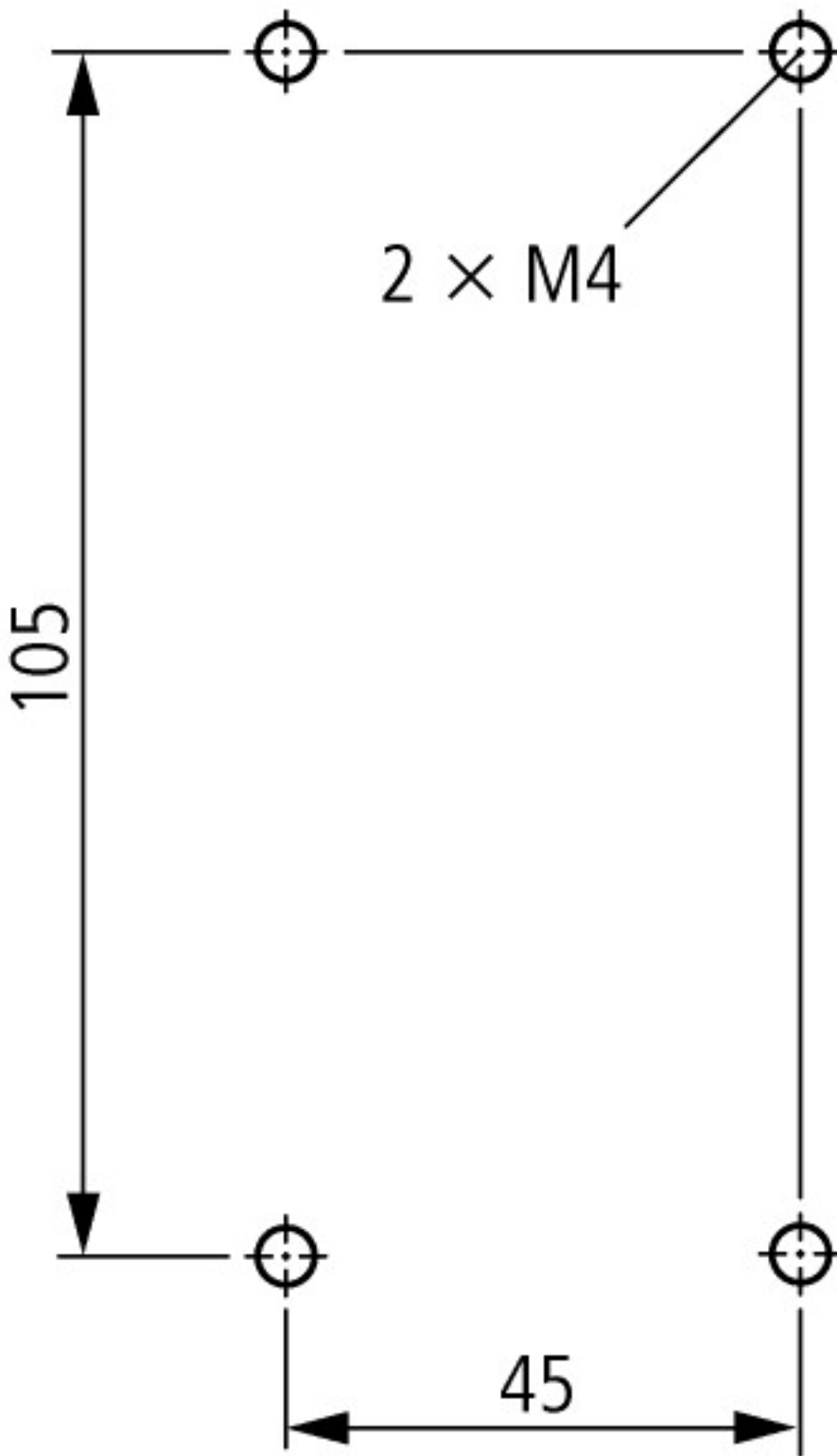
Switching conditions for non-motor consumers, 3 pole, 4 pole  
 Operating characteristics  
 Non inductive and slightly inductive loads  
 Electrical characteristics:  
 Switch on: 1 x rated operational current  
 Switch off: 1 x rated operational current  
 Utilization



## Dimensions



Contactor with auxiliary contact module



side clearance to earthed parts: 6 mm

### Additional product information (links)

Motor starters and "Special Purpose Ratings" for the North American market	<a href="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</a>
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>

