



Contactor, 22kW/400V, AC-operated



Powering Business Worldwide™

Part no. DILM50(230V50HZ,240V60HZ)

Article no. 277830

Program

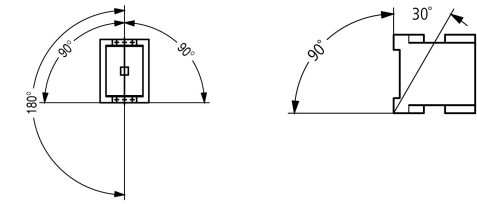
| | | | |
|---|--------------|----|---------------------------------------|
| Product range | | | Contactors |
| Application | | | Contactors for Motors |
| Subrange | | | Contactors up to 170 A, 3 pole |
| Connection technique | | | Screw terminals |
| Pole | | | 3 pole |
| Rated operational current | | | |
| AC-3 | | | |
| 380 V 400 V | I_e | A | 50 |
| AC-1 | | | |
| Conventional free air thermal current, 3 pole, 50 - 60 Hz | | | |
| Open | | | |
| at 40 °C | $I_{th}=I_e$ | A | 80 |
| Max. rating for three-phase motors, 50 - 60 Hz | | | |
| AC-3 | | | |
| 220 V 230 V | P | kW | 15.5 |
| 380 V 400 V | P | kW | 22 |
| 660 V 690 V | P | kW | 30 |
| AC-4 | | | |
| 220 V 230 V | P | kW | 6 |
| 380 V 400 V | P | kW | 10 |
| 660 V 690 V | P | kW | 14 |
| Contact sequence | | | |
| Instructions | | | Contacts to EN 50012. |
| Can be combined with auxiliary contact | | | DILM150-XHI(V).. DILM1000-XHI(V).. |
| Voltage AC/DC | | | AC operation |

Approbationen

| | |
|---------------------------|---|
| UL approval | Yes |
| CSA approval | Yes |
| Product Standards | IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 14-05; CE marking |
| UL File No. | E29096 |
| UL CCN | NLDX |
| CSA File No. | 012528 |
| CSA Class No. | 2411-03, 3211-04 |
| NA Certification | UL listed, CSA certified |
| Specially designed for NA | No |

General

| | | | |
|---------------------------------|--------------|----------|---------------------------------|
| Standards | | | IEC/EN 60947, VDE 0660, UL, CSA |
| Lifespan, mechanical | | | |
| AC operated | Operations | $x 10^6$ | 10 |
| DC operated | Operations | $x 10^6$ | 10 |
| Operating frequency, mechanical | | | |
| AC operated | Operations/h | | 5000 |
| 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 | | °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 | 10 |
| Auxiliary contacts | | | |
| N/O contact | | g | 7 |
| N/C contact | | g | 5 |
| Protection type | | | IP00 |
| Protection against direct contact when actuated from front (EN 90274) | | | Finger- and back-of-hand proof |
| Weight | | | |
| AC operated | | kg | 0.9 |
| DC operated | | kg | 1.1 |
| Terminal capacity main cable | | | |
| Solid | | mm ² | 1 x (0.75 - 16) 2 x (0.75 - 16) |
| Flexible with ferrule | | mm ² | 1 x (0.75 - 35) 2 x (0.75 - 25) |
| Stranded | | mm ² | 1 x (16 - 50) 2 x (16 - 35) |
| Solid or stranded | | AWG | 12 - 2 |
| Flat conductor | Number of segments x width x thickness | mm | 2 x (6 x 9 x 0.8) |
| Main cable connection screw/bolt | | | M6 |
| Tightening torque | | Nm | 3.3 |
| Terminal capacity control circuit cables | | | |
| Solid | | mm ² | 1 x (0.75 - 4) 2 x (0.75 - 4) |
| Flexible with ferrule | | mm ² | 1 x (0.75 - 2.5) 2 x (0.75 - 2.5) |
| Solid or stranded | | AWG | 18 - 14 |
| 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 x 5.5 1 x 6 |

| | | | |
|--|--|-----------------|--------------------------------------|
| Control circuit cables | | | |
| 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 - 2.5) 2 x (0.75 - 2.5) |
| Flexible | | mm ² | 1 x (0.75 - 2.5) 2 x (0.75 - 2.5) |
| Flexible with ferrule | | mm ² | 1 x (0.75 - 1.5) 2 x (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 | 440 |
| between the contacts | | V AC | 440 |
| Making capacity (p.f. to IEC/EN 60947) | | | |
| | Up to 690 V | A | 700 |
| Breaking capacity | | | |
| 220/230 V | | A | 500 |
| 380/400 V | | A | 500 |
| 500 V | | A | 500 |
| 660/690 V | | A | 320 |
| Short-circuit rating | | | |
| Short-circuit protection maximum fuse | | | |
| Type "2" coordination | | | |
| 400 V | gG/gL 500 V | A | 80 |
| 690 V | gG/gL 690 V | A | 63 |
| Type "1" coordination | | | |
| 400 V | gG/gL 500 V | A | 160 |
| 690 V | gG/gL 690 V | A | 80 |

AC

| | | | |
|---|----------------|---|-----|
| AC-1 duty | | | |
| Conventional free air thermal current, 3 pole, 50 - 60 Hz | | | |
| Open | | | |
| at 40 °C | $I_{th} = I_e$ | A | 80 |
| at 50 °C | $I_{th} = I_e$ | A | 71 |
| at 55 °C | $I_{th} = I_e$ | A | 68 |
| at 60 °C | $I_{th} = I_e$ | A | 65 |
| enclosed | I_{th} | A | 58 |
| Conventional free air thermal current, 1 pole | | | |
| open | I_{th} | A | 162 |
| enclosed | I_{th} | A | 145 |
| AC-3 duty | | | |

| | | | |
|---|-------|-----|------|
| Rated operational current AC-3 open, 50 - 60 Hz, 3 pole | I_e | | |
| 220/230 V | I_e | A | 50 |
| 240 V | I_e | A | 50 |
| 380/400 V | I_e | A | 50 |
| 415 V | I_e | A | 50 |
| 440V | I_e | A | 50 |
| 500 V | I_e | A | 50 |
| 660/690 V | I_e | A | 32 |
| Motor rating | P | kWh | |
| 220/230 V | P | kW | 15.5 |
| 240V | P | kW | 17 |
| 380/400 V | P | kW | 22 |
| 415 V | P | kW | 30 |
| 440 V | P | kW | 32 |
| 500 V | P | kW | 36 |
| 660/690 V | P | kW | 30 |
| AC-4 duty | | | |
| Rated operational current AC-4 open, 50 - 60 Hz, 3 pole | I_e | | |
| 220/230 V | I_e | A | 21 |
| 240 V | I_e | A | 21 |
| 380/400 V | I_e | A | 21 |
| 415 V | I_e | A | 21 |
| 440 V | I_e | A | 21 |
| 500 V | I_e | A | 21 |
| 660/690 V | I_e | A | 17 |
| Motor rating | P | kWh | |
| 220/230 V | P | kW | 6 |
| 240 V | P | kW | 6.5 |
| 380/400 V | P | kW | 10 |
| 415 V | P | kW | 11 |
| 440 V | P | kW | 12 |
| 500 V | P | kW | 13 |
| 660/690 V | P | kW | 14 |

DC

| | | | |
|---------------------------------|-------|---|-----|
| Rated operational current, open | | | |
| DC-1 operation | | | |
| 60 V | I_e | A | 60 |
| 110 V | I_e | A | 50 |
| 220 V | I_e | A | 45 |
| 440 V | I_e | A | 2.9 |
| DC-3 operation | | | |
| 60 V | I_e | A | 60 |
| 110 V | I_e | A | 50 |
| 220 V | I_e | A | 25 |
| 440 V | I_e | A | 0.6 |
| DC-5 operation | | | |
| 60 V | I_e | A | 60 |
| 110 V | I_e | A | 50 |
| 220 V | I_e | A | 25 |
| 440 V | I_e | A | 0.6 |

Current heat loss (3 pole)

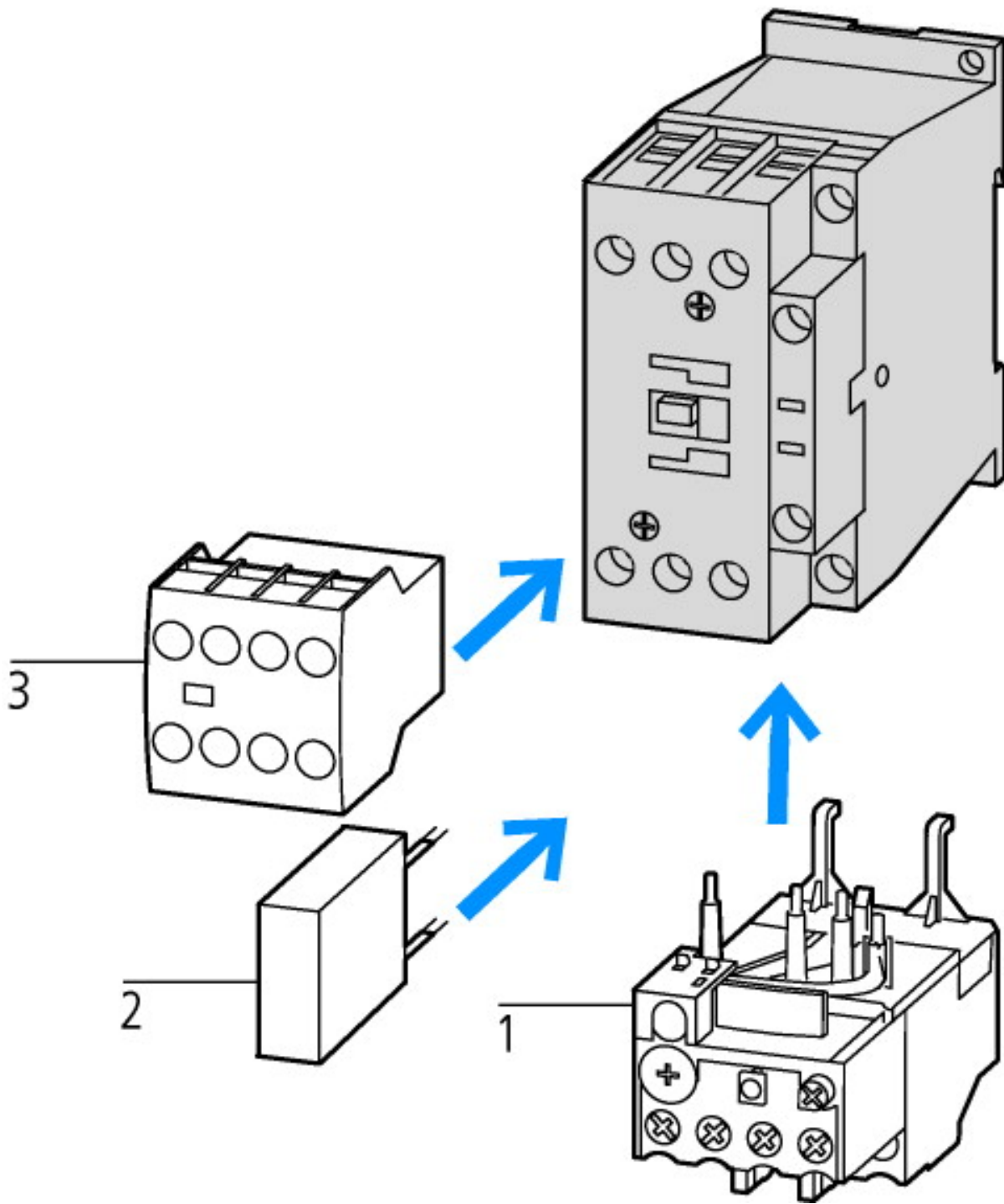
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|--|--|---|------|
| Current heat loss at I_{th} | | W | 19 |
| Current heat loss at I_e to AC-3/400 V | | W | 11.3 |

| | | | |
|--|----------|------------------|---|
| Impedance per pole | | mΩ | 1.5 |
| Magnet systems | | | |
| Voltage tolerance | | x U _c | |
| 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 |
| DC operated | Pick-up | x U _c | 0.7 - 1.2 |
| Notes | | | at least smoothed two-phase bridge rectifier or three-phase rectifier |
| DC operated | Drop-out | x U _c | 0.15 - 0.6 |
| Power consumption of the coil in a cold state and 1.0 x U _c | | | |
| 50 Hz | Pick-up | VA | 149 |
| 50 Hz | Sealing | VA | 16 |
| 50 Hz | Sealing | W | 4.3 |
| 60 Hz | Pick-up | VA | 178 |
| 60 Hz | Sealing | VA | 19 |
| 60 Hz | Sealing | W | 5.3 |
| 50/60 Hz | Pick-up | VA | 168 154 |
| 50/60 Hz | Sealing | VA | 22 14 |
| 50/60 Hz | Sealing | W | 5.3 4.3 |
| DC operated | Pick-up | W | 24 |
| DC operated | Sealing | W | 0.5 |
| Duty factor | | % DF | 100 |
| Switching times at 100 % U _c (approximate values) | | | |
| Main contacts | | | |
| AC operated | | | |
| Closing delay | | ms | 12 - 18 |
| Opening delay | | ms | 8 - 13 |
| DC operated | | | |
| Closing delay | | ms | 54 |
| Opening delay | | ms | 24 |
| 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 |

Technical data according to ETIM 4.0

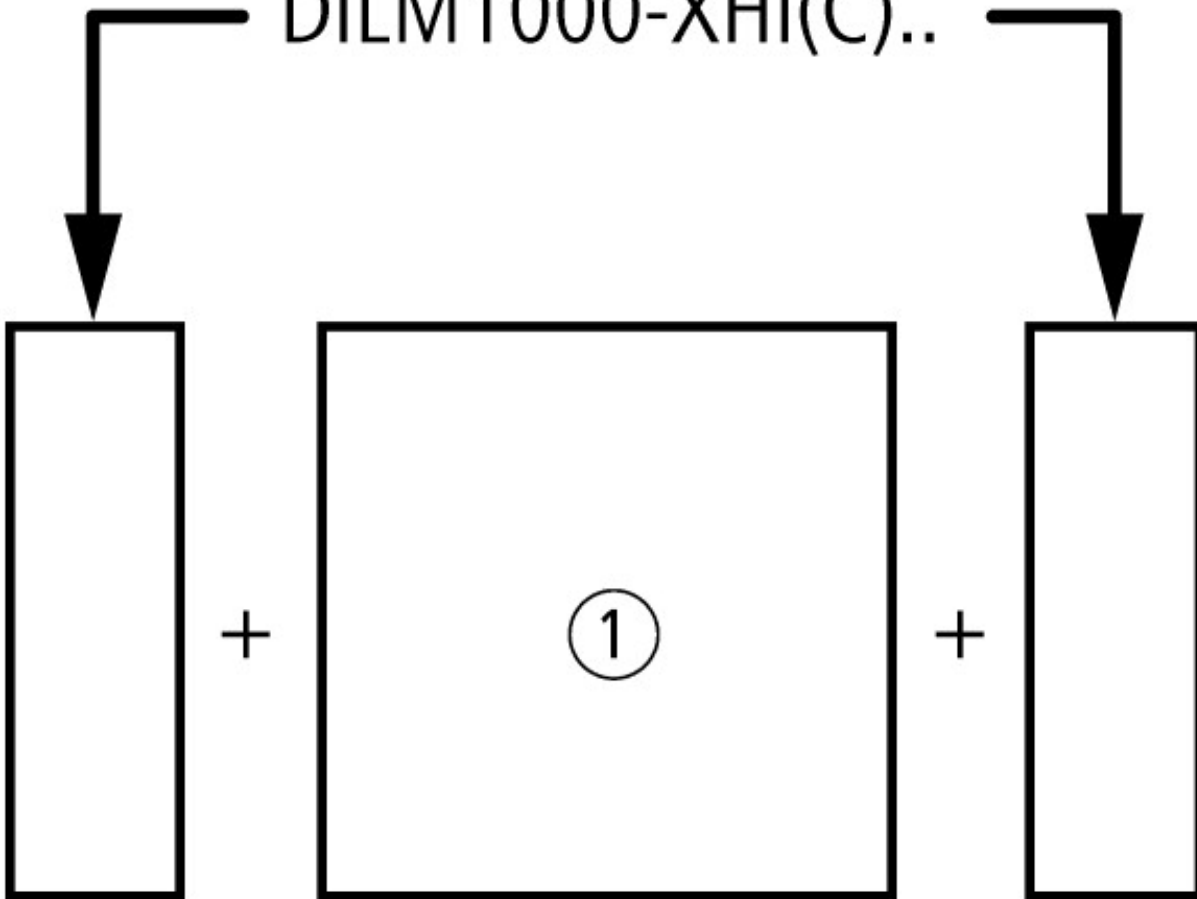
| | | | |
|---|--|-----|------------------|
| Number of main contacts as N/Os | | | 3 |
| Rated operation current I _e at AC-1, 400 V | | | 80 |
| Connection type main circuit | | | Screw connection |
| Rated control voltage U _s at AC 60HZ | | V | 240 |
| Number of auxiliary contacts as N/Os | | | 0 |
| Rated control voltage U _s at AC 50HZ | | V | 230 |
| Number of auxiliary contacts as N/Cs | | | 0 |
| Suitable for rail-mounting | | | No |
| Rated control voltage U _s at DC | | V | 0 |
| Voltage type for actuation | | | AC |
| Rated operation current I _e at AC-3, 400 V | | A | 50 |
| Number of N/Cs as main contact | | | 0 |
| Motor rating at AC-3, 400 V | | kWh | 22 |

Characteristics

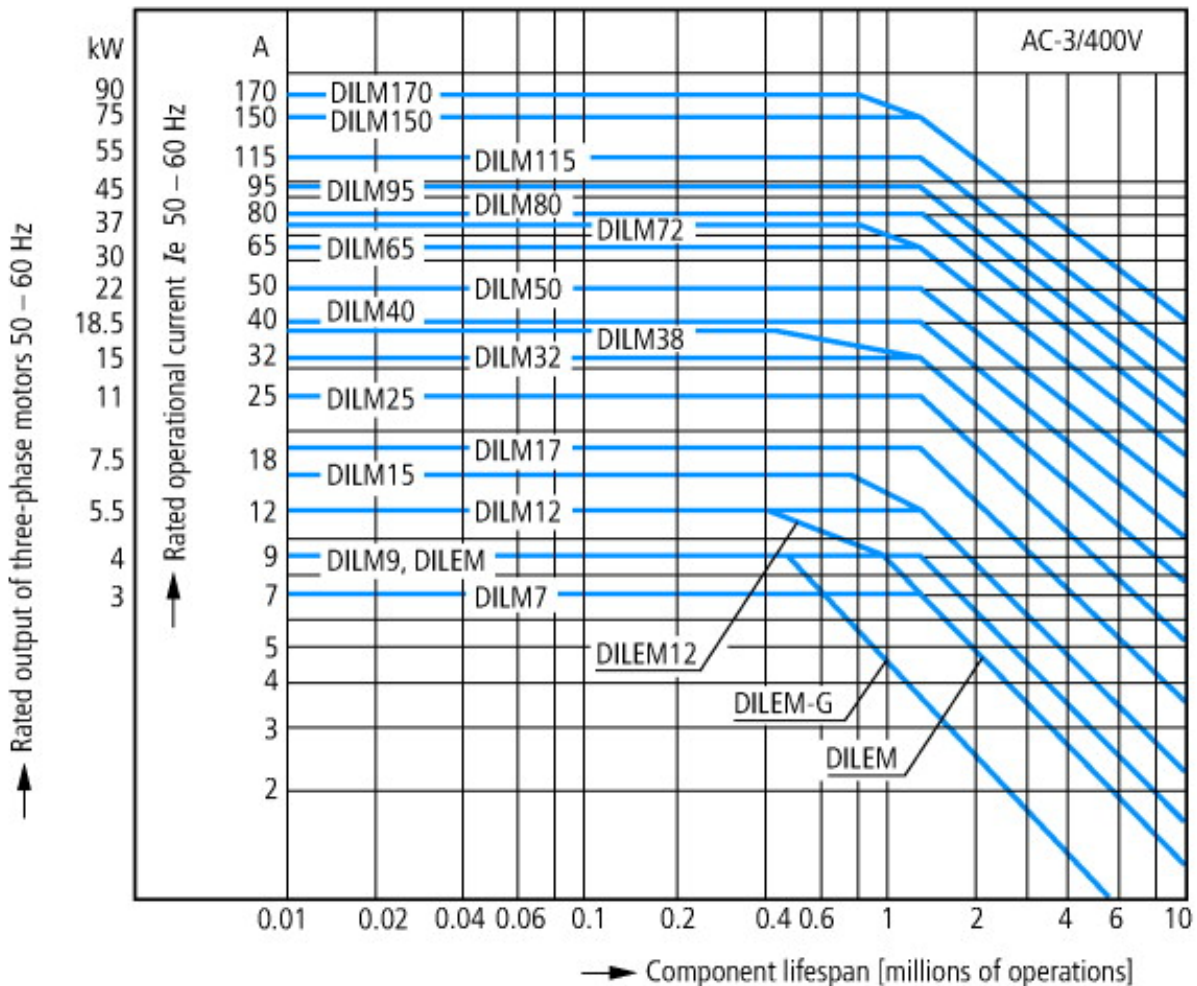


- 1: Overload relay
- 2: Suppressor
- 3: Auxiliary contact modules

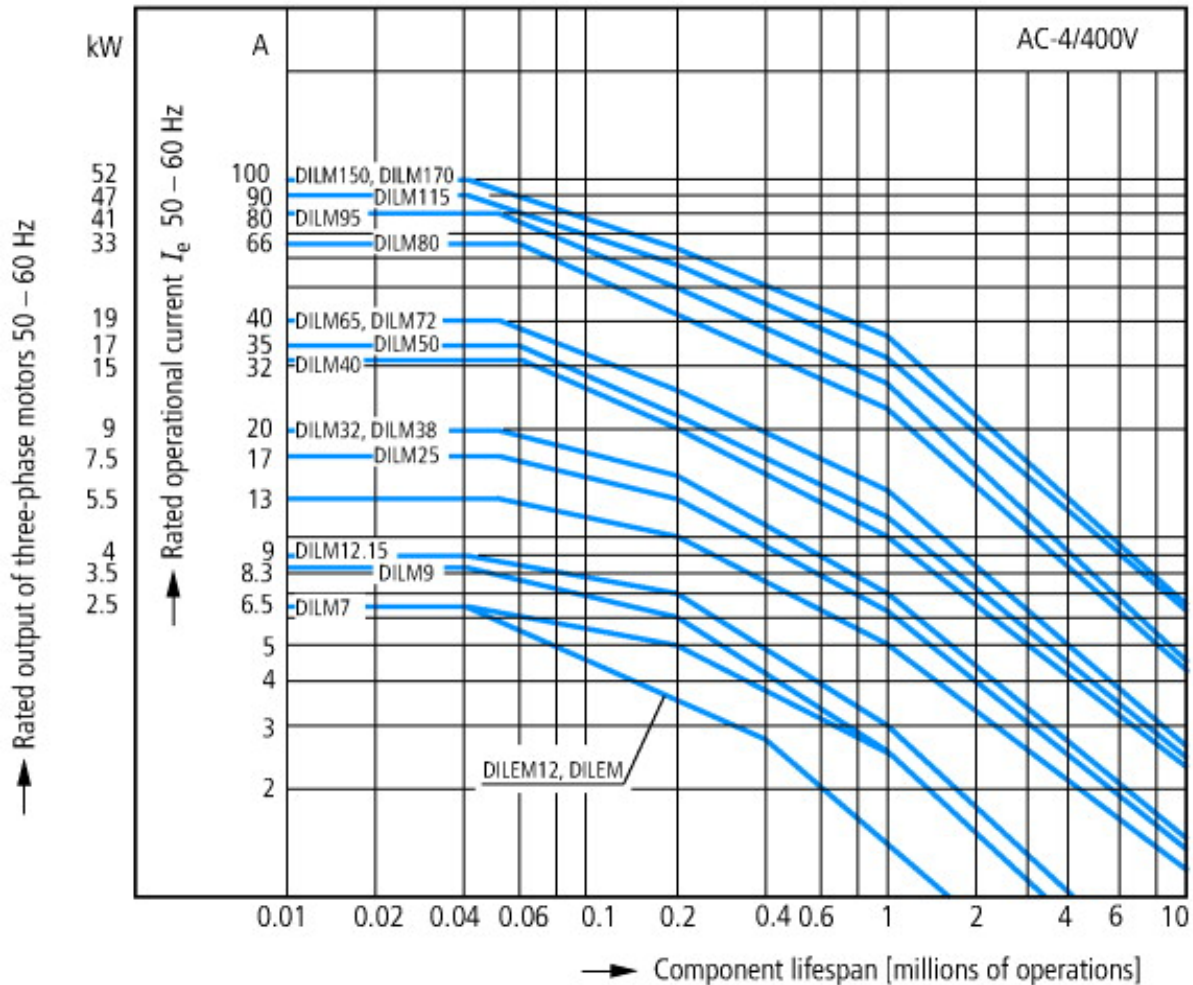
DILM1000-XHI(C)..



on the side: 2 x DILM1000-XHI(V)11-SI; surface mounting: 1 x DILM150-XHIA11
 on the side: 2 x DILM1000-XHI(V)11-SA; surface mounting: 1 x DILM150-XHI (2 pole)
 on the side: 1 x DILM1000-XHI(V)11-SI; surface mounting: 1 x DILM150-XHIA22
 on the side: 1 x DILM1000-XHI(V)11-SA; surface mounting: 1 x DILM150-XHI (4 pole)



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



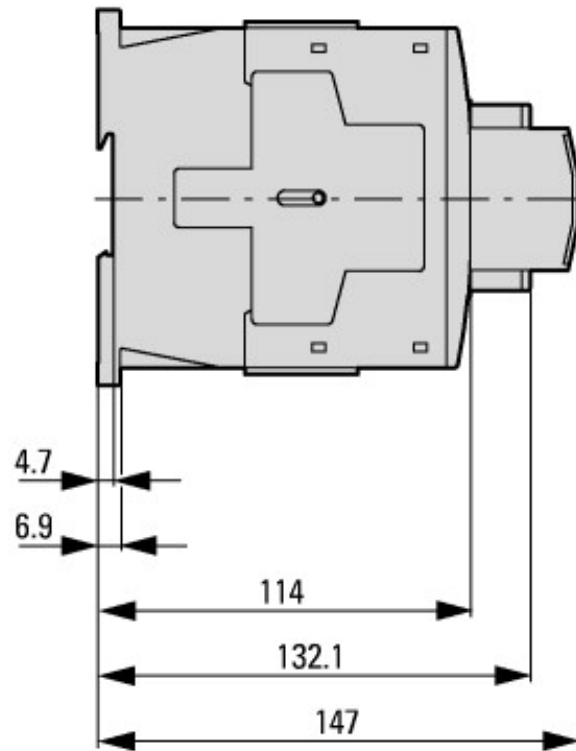
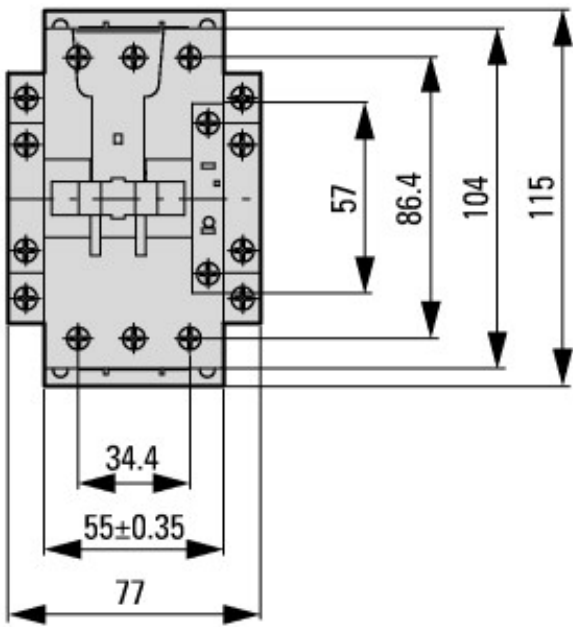
Extreme switching duty
 Squirrel-cage motor
 Operating characteristics
 Inching, plugging, reversing
 Electrical characteristics
 Make: up to 6 x rated motor current
 Break: up to 6 x rated motor current
 Utilization category
 100 % AC-4
 Typical applications
 Printing presses
 Wire-drawing machines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

CAD-Data

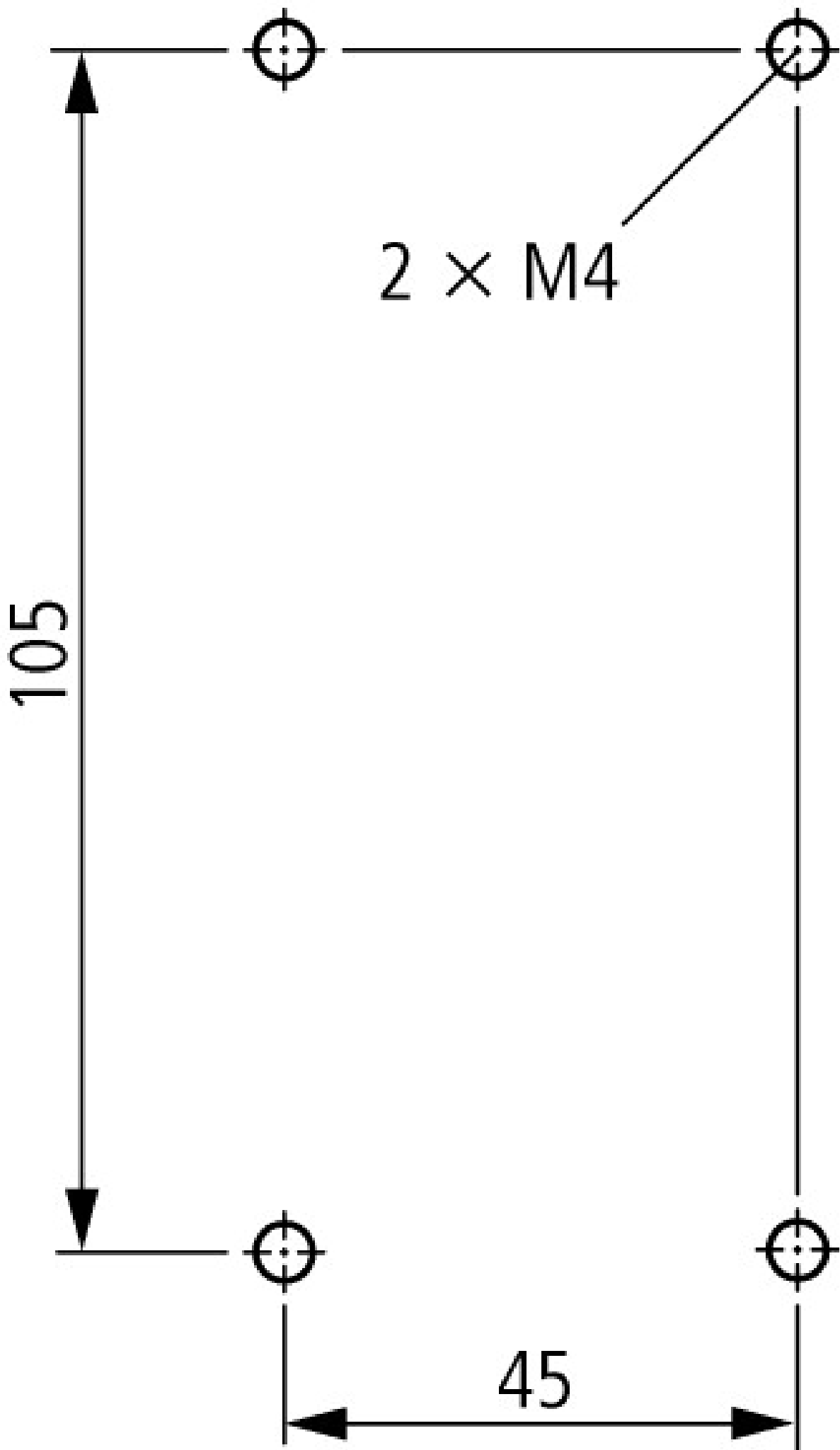
Product standards CAD data:

<http://eaton-moeller.partcommunity.com>

Dimensions



Contacteur avec module de contact auxiliaire



Lateral clearance to earthed parts: 6 mm

Additional product information (links)

| | |
|--|---|
| IL03407033Z (AWA2100-2247) Contactor DILM, basic unit | ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407033Z2010_10.pdf |
| Motor starters and "Special Purpose Ratings" for the North American market | http://www.moeller.net/binary/ver_techpapers/ver953en.pdf |
| Busbar Component Adapters for modern Industrial control panels | http://www.moeller.net/binary/ver_techpapers/ver960en.pdf |
| The Interaction of Contactors with PLCs | http://www.moeller.net/binary/ver_techpapers/ver957en.pdf |
| Standard Compliant and Functionally Safe Engineering Design with Mechanical Auxiliary Contacts | http://www.moeller.net/binary/ver_techpapers/ver956en.pdf |
| Switchgear for Luminaires | http://www.moeller.net/binary/ver_techpapers/ver955en.pdf |
| Effect of the Cable Capacitance of Long Control Cables on the Actuation of Contactors | http://www.moeller.net/binary/ver_techpapers/ver949en.pdf |
| X-Start - Modern Switching Installations Efficiently Fitted and Wired Securely | http://www.moeller.net/binary/ver_techpapers/ver938en.pdf |
| Mirror Contacts for Highly-Reliable Information Relating to Safety-Related Control Functions | http://www.moeller.net/binary/ver_techpapers/ver944en.pdf |
| X-Start - New Generation:100 years of Moeller contactors - Continuous Progress- | http://www.moeller.net/binary/ver_techpapers/ver937en.pdf |
| Switchgear of Power Factor Correction Systems | http://www.moeller.net/binary/ver_techpapers/ver934en.pdf |