
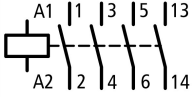




**Contactor, 3p+1N/O, 25HP/600VAC, SEMI F47**

**Part no. DILMF32-10(RAC240)**  
**Article no. 104453**  
**Catalog No. XTCE032C10B-F47**

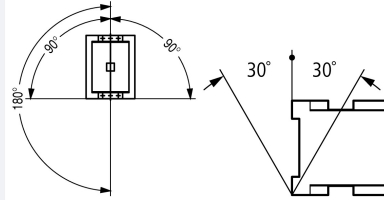
## Delivery program

|   |                |    |  |  |
|---|----------------|----|--|--|
| Product range   |                |    |  | Contactors   |
| Application   |                |    |  | Contactors for Semiconductor Industries acc. to SEMI F47   |
| Subrange  |                |    |  | Contactors up to 150 A with electronic actuation   |
| Utilization category                                      |                |    |  | AC-1: Non-inductive or slightly inductive loads, resistance furnaces<br>NAC-3: Normal AC induction motors: starting, switch off during running<br>AC-4: Normal AC induction motors: starting, plugging, reversing, inching |
|   |                |    |  |    |
| Notes   |                |    |  | Also suitable for motors with efficiency class IE3.<br>IE3-ready devices are identified by the logo on their packaging.  |
| Connection technique                                      |                |    |  | Screw terminals  |
| Description   |                |    |  | Contactors suitable for semi-conductor industry according to SEMI F47.<br>Contactors hum-free, suitable for building services automation.<br>Operating mechanism adjustable from 50 Hz to 400 Hz.                          |
| Number of poles   |                |    |  | 3 pole   |
| <b>Rated operational current</b>                          |                |    |  |  |
| AC-3  |                |    |  |  |
| 380 V 400 V   | $I_e$          | A  |  | 32   |
| 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   |
| <b>Max. rating for three-phase motors, 50 - 60 Hz</b>     |                |    |  |  |
| AC-3  |                |    |  |  |
| 220 V 230 V   | P              | kW |  | 10   |
| 380 V 400 V   | P              | kW |  | 15   |
| 660 V 690 V   | P              | kW |  | 17   |
| AC-4  |                |    |  |  |
| 220 V 230 V   | P              | kW |  | 4  |
| 380 V 400 V   | P              | kW |  | 7  |
| 660 V 690 V   | P              | kW |  | 10   |
| <b>Contacts</b>   |                |    |  |  |
| N/O = Normally open                                       |                |    |  | 1 N/O  |
| Contact sequence  |                |    |  |    |
| Instructions  |                |    |  | Contacts to EN 50012.<br>built-in suppressor circuit*  |

# Technical data

## General

Mounting position



## 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 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                                  |                |     |     |
| 220 V 230 V   | $I_e$          | A   | 32  |
| 240 V   | $I_e$          | A   | 32  |
| 380 V 400 V   | $I_e$          | A   | 32  |
| 415 V   | $I_e$          | A   | 32  |
| 440V  | $I_e$          | A   | 32  |
| 500 V   | $I_e$          | A   | 32  |
| 660 V 690 V   | $I_e$          | A   | 18  |
| Motor rating  |                |     |     |
| 220 V 230 V   | P              | kWh | 10  |
| 240V  | P              | kWh | 11  |
| 380 V 400 V   | P              | kWh | 15  |
| 415 V   | P              | kWh | 19  |
| 440 V   | P              | kWh | 20  |
| 500 V   | P              | kWh | 23  |
| 660 V 690 V   | P              | kWh | 17  |
| 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              | kWh | 4   |
| 240 V   | P              | kWh | 4.5 |
| 380 V 400 V   | P              | kWh | 7   |
| 415 V   | P              | kWh | 7.5 |
| 440 V   | P              | kWh | 8   |
| 500 V   | P              | kWh | 9   |

|  |          |         |                         |
|--|----------|---------|-------------------------|
| 660 V 690 V  | P        | kW      | 10                      |
| <b>Current heat loss</b>   |          |         |                         |
| 3-pole at $I_{th}$   |          | W       | 12.1                    |
| Current heat loss at $I_e$ to AC-3/400 V                           |          | W       | 6.1                     |
| <b>Magnet systems</b>  |          |         |                         |
| Voltage tolerance  |          |         |                         |
| AC operated  | Pick-up  | $x U_c$ | 0.8 - 1.15              |
| Drop-out voltage AC operated                                       | Drop-out | $x U_c$ | 0.2 - 0.5               |
| Power consumption of the coil in a cold state and $1.0 \times U_c$ |          |         |                         |
| Electronic actuation   | Pick-up  | VA      | 14                      |
| Electronic actuation   | Sealing  | VA      | 0.7                     |
| Electronic actuation   | Sealing  | W       | 0.7                     |
| Duty factor  |          | % DF    | 100                     |
| Operating times  |          |         |                         |
| Closing delay  |          | ms      | 40                      |
| Opening delay  |          | ms      | 45                      |
| -suitable according to   |          |         | SEMI F47                |
| <b>Electromagnetic compatibility (EMC)</b>                         |          |         |                         |
| Emitted interference   |          |         | according to EN 60947-1 |
| Interference immunity  |          |         | according to EN 60947-1 |
| <b>Additional technical data</b>                                   |          |         |                         |
| like the contactor   | DIL      |         | M32                     |

## Design verification as per IEC/EN 61439

|  |            |    |  |
|--|------------|----|--|
| Technical data for design verification   |            |    |  |
| Rated operational current for specified heat dissipation   | $I_n$      | A  | 32   |
| Heat dissipation per pole, current-dependent   | $P_{vid}$  | W  | 2.2  |
| Equipment heat dissipation, current-dependent  | $P_{vid}$  | W  | 6.6  |
| Static heat dissipation, non-current-dependent   | $P_{vs}$   | W  | 0.8  |
| 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  |            |    | Meets the product standard's requirements.   |
| 10.2.3 Verification of thermal stability of enclosures   |            |    |  |
| 10.2.3.1 Verification of resistance of insulating materials to normal heat   |            |    | Meets the product standard's requirements.   |
| 10.2.3.2 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects |            |    | Meets the product standard's requirements.   |
| 10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects |            |    | Meets the product standard's requirements.   |
| 10.2.4 Resistance to ultra-violet (UV) radiation   |            |    | Meets the product standard's requirements.   |
| 10.2.5 Lifting   |            |    | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.2.6 Mechanical impact   |            |    | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.2.7 Inscriptions  |            |    | Meets the product standard's requirements.   |
| 10.3 Degree of protection of ASSEMBLIES  |            |    | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.4 Clearances and creepage distances   |            |    | Meets the product standard's requirements.   |
| 10.5 Protection against electric shock   |            |    | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.6 Incorporation of switching devices and components   |            |    | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.7 Internal electrical circuits and connections  |            |    | Is the panel builder's responsibility.   |
| 10.8 Connections for external conductors   |            |    | Is the panel builder's responsibility.   |
| 10.9 Insulation properties   |            |    |  |
| 10.9.2 Power-frequency electric strength   |            |    | Is the panel builder's responsibility.   |
| 10.9.3 Impulse withstand voltage   |            |    | Is the panel builder's responsibility.   |
| 10.9.4 Testing of enclosures made of insulating material   |            |    | Is the panel builder's responsibility.   |
| 10.10 Temperature rise   |            |    | The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices. |
| 10.11 Short-circuit rating   |            |    | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |

|                                     |  |  |
|-------------------------------------|--|--|
| 10.12 Electromagnetic compatibility |  | Is the panel builder's responsibility. The specifications for the switchgear must be observed.           |
| 10.13 Mechanical function           |  | The device meets the requirements, provided the information in the instruction leaflet (IL) is observed. |

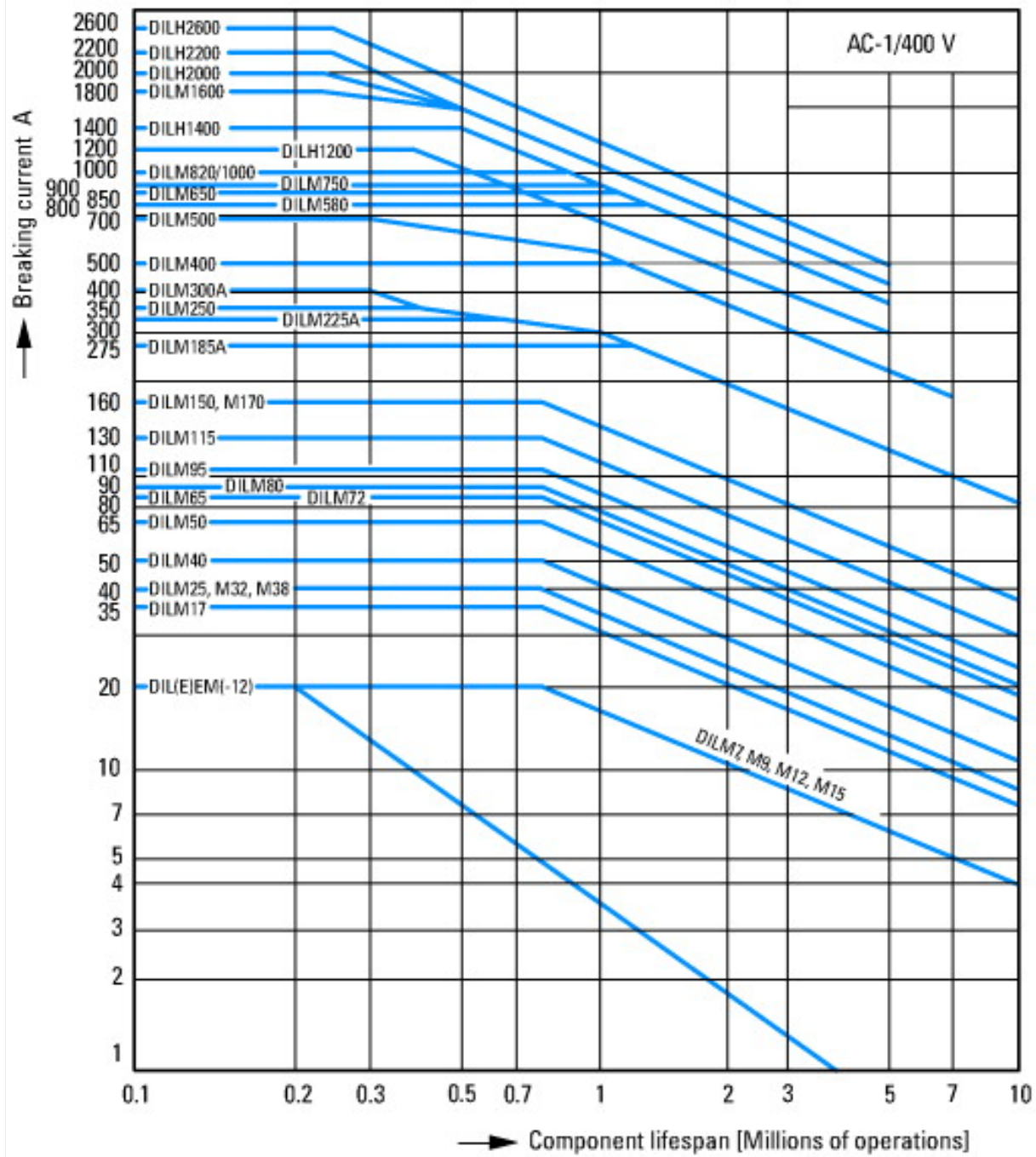
## Technical data ETIM 6.0

|  |    |                  |
|--|----|------------------|
| 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@ss8.1-27-37-10-03 [AAB718012]) |    |                  |
| Rated control supply voltage Us at AC 50HZ   | V  | 190 - 240        |
| Rated control supply voltage Us at AC 60HZ   | V  | 190 - 240        |
| Rated control supply voltage Us 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  | 32               |
| Rated operation power at AC-3, 400 V   | kW | 15               |
| Rated operation current Ie at AC-4, 400 V  | A  | 15               |
| Rated operation power Ie at AC-4, 400 V  | kW | 7                |
| Modular version  |    | No               |
| Number of auxiliary contacts as normally open contact  |    | 1                |
| Number of auxiliary contacts as normally closed contact  |    | 0                |
| 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

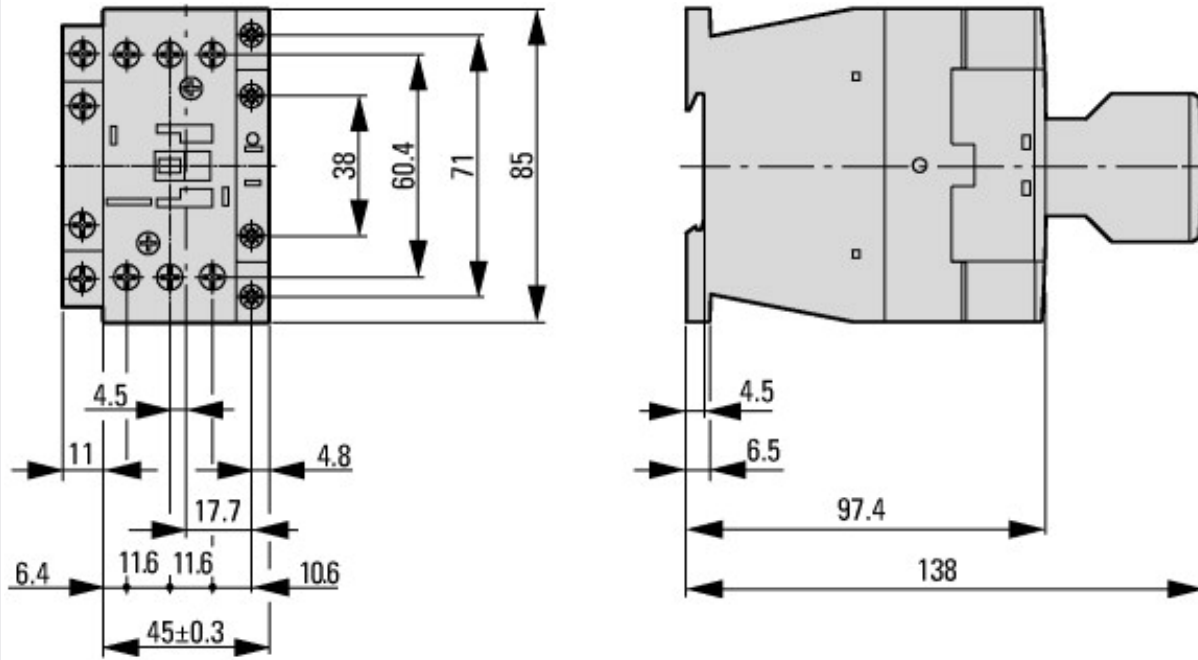
|                                      |  |   |
|--------------------------------------|--|---|
| Product Standards                    |  | IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 14-05; CE marking |
| UL File No.                          |  | E29096  |
| UL Category Control No.              |  | NLDX  |
| 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

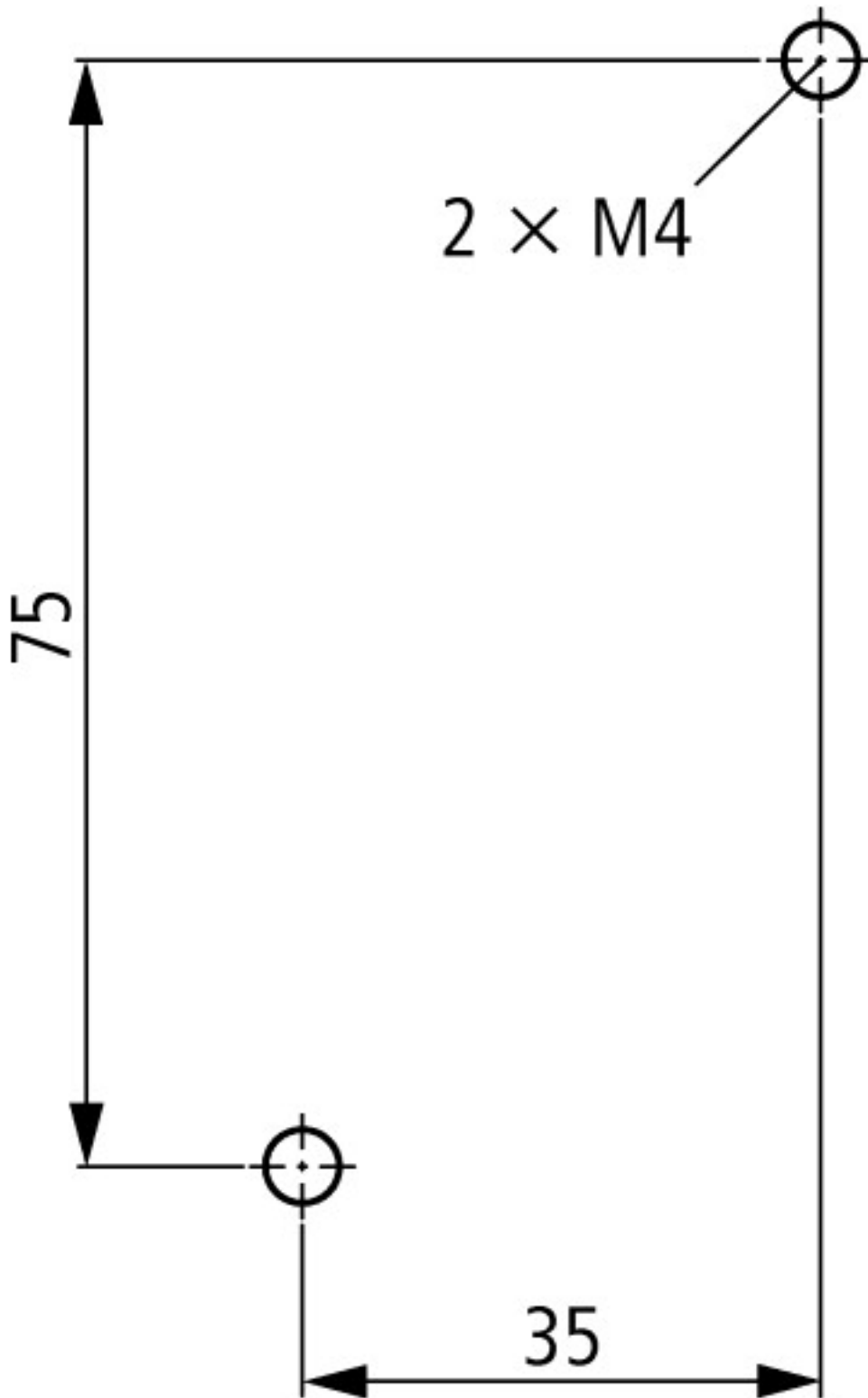


Switching conditions for non-motor consumers, 3 pole, 4 pole  
 Operating characteristics  
 Non inductive and slightly inductive loads  
 Electrical characteristics  
 Switch on: 1 x rated operational current  
 Switch off: 1 x rated operational current  
 Utilization category  
 100 % AC-1  
 Typical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

## Dimensions



Contacteur with auxiliary contact module



Lateral clearance to earthed parts: 6 mm

### Additional product information (links)

#### IL03407014Z (AWA2100-2127) Contactor

IL03407014Z (AWA2100-2127) Contactor [ftp://ftp.moeller.net/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL03407014Z2012\\_03.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407014Z2012_03.pdf)

Switchgear of Power Factor Correction Systems [http://www.moeller.net/binary/ver\\_techpapers/ver934en.pdf](http://www.moeller.net/binary/ver_techpapers/ver934en.pdf)

X-Start - Modern Switching Installations Efficiently Fitted and Wired Securely [http://www.moeller.net/binary/ver\\_techpapers/ver938en.pdf](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](http://www.moeller.net/binary/ver_techpapers/ver944en.pdf)

Effect of the Cabel Capacitance of Long Control Cables on the Actuation of Contactors [http://www.moeller.net/binary/ver\\_techpapers/ver949en.pdf](http://www.moeller.net/binary/ver_techpapers/ver949en.pdf)

Motor starters and "Special Purpose Ratings" for the North American market [http://www.moeller.net/binary/ver\\_techpapers/ver953en.pdf](http://www.moeller.net/binary/ver_techpapers/ver953en.pdf)

Switchgear for Luminaires [http://www.moeller.net/binary/ver\\_techpapers/ver955en.pdf](http://www.moeller.net/binary/ver_techpapers/ver955en.pdf)

|  |   |
|--|---|
| 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> |