


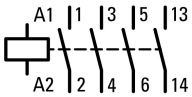


Contactors for Semiconductor Industries acc. to SEMI F47, 380 V 400 V: 7 A, 1 N/O, RAC 240: 190 - 240 V 50/60 Hz, Screw terminals



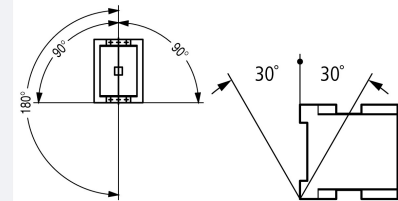
Part no. **DILMF8-10(RAC240)**
 Catalog No. **104413**
 Alternate Catalog No. **XTCE008C10B-F47**

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 NAC-3: Normal AC induction motors: starting, switch off during running AC-4: Normal AC induction motors: starting, plugging, reversing, inching |
| Notes | | | |  Also suitable for motors with efficiency class IE3. 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. Contactors hum-free, suitable for building services automation. Operating mechanism adjustable from 50 Hz to 400 Hz. |
| Number of poles | | | | 3 pole |
| Rated operational current | | | | |
| AC-3 | | | | |
| 380 V 400 V | I_e | A | | 7 |
| AC-1 | | | | |
| Conventional free air thermal current, 3 pole, 50 - 60 Hz | | | | |
| Open | | | | |
| at 40 °C | $I_{th} = I_e$ | A | | 22 |
| enclosed | I_{th} | A | | 18 |
| Conventional free air thermal current, 1 pole | | | | |
| open | I_{th} | A | | 50 |
| enclosed | I_{th} | A | | 45 |
| Max. rating for three-phase motors, 50 - 60 Hz | | | | |
| AC-3 | | | | |
| 220 V 230 V | P | kW | | 2.2 |
| 380 V 400 V | P | kW | | 3 |
| 660 V 690 V | P | kW | | 3.5 |
| AC-4 | | | | |
| 220 V 230 V | P | kW | | 1 |
| 380 V 400 V | P | kW | | 2.2 |
| 660 V 690 V | P | kW | | 2.9 |
| Contacts | | | | |
| N/O = Normally open | | | | 1 N/O |
| Contact sequence | | | |  |
| Actuating voltage | | | | RAC 240: 190 - 240 V 50/60 Hz |
| Instructions | | | | Contacts to EN 50 012. built-in suppressor circuit' integrated suppressor circuit in actuating electronics |

Technical data

General

| | | | |
|-------------------|---|-----------|--|
| Mounting position | | |  |
| Altitude | m | Max. 2000 | |

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 | 22 |
| at 50 °C | $I_{th} = I_e$ | A | 21 |
| at 60 °C | $I_{th} = I_e$ | 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 | | | |
| Rated operational current | | | |
| Open, 3-pole: 50 – 60 Hz | | | |
| Notes | | | At maximum permissible ambient temperature (open.) |
| 220 V 230 V | I_e | A | 7 |
| 240 V | I_e | A | 7 |
| 380 V 400 V | I_e | A | 7 |
| 415 V | I_e | A | 7 |
| 440V | I_e | A | 7 |
| 500 V | I_e | A | 5 |
| 660 V 690 V | I_e | A | 4 |
| Motor rating | P | kWh | |
| 220 V 230 V | P | kW | 2.2 |
| 240V | P | kW | 2.2 |
| 380 V 400 V | P | kW | 3 |
| 415 V | P | kW | 4 |
| 440 V | P | kW | 4.5 |
| 500 V | P | kW | 3.5 |
| 660 V 690 V | P | kW | 3.5 |
| AC-4 | | | |
| Open, 3-pole: 50 – 60 Hz | | | |
| 220 V 230 V | I_e | A | 5 |
| 240 V | I_e | A | 5 |
| 380 V 400 V | I_e | A | 5 |
| 415 V | I_e | A | 5 |
| 440 V | I_e | A | 5 |
| 500 V | I_e | A | 4.5 |
| 660 V 690 V | I_e | A | 4 |
| Motor rating | P | kWh | |
| 220 V 230 V | P | kW | 1 |
| 240 V | P | kW | 1.5 |
| 380 V 400 V | P | kW | 2.2 |
| 415 V | P | kW | 2.3 |

| | | | |
|-------------|---|----|-----|
| 440 V | P | kW | 2.4 |
| 500 V | P | kW | 2.5 |
| 660 V 690 V | P | kW | 2.9 |

Current heat loss

| | | | |
|--|--|---|-----|
| 3 pole, at I_{th} (60°) | | W | 2.4 |
| Current heat loss at I_e to AC-3/400 V | | W | 0.3 |

Magnet systems

| | | | |
|--|----------|---------|------------|
| 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 $1.0 \times U_S$ | | | |
| Electronic actuation | Pick-up | VA | 14 |
| Electronic actuation | Sealing | VA | 0.7 |
| Electronic actuation | Sealing | W | 0.8 |
| Duty factor | | % DF | 100 |
| Operating times | | | |
| Closing delay | | ms | 40 |
| Opening delay | | ms | 45 |
| -suitable according to | | | SEMI F47 |

Electromagnetic compatibility (EMC)

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

Additional technical data

| | | | |
|--------------------|-----|--|----|
| like the contactor | DIL | | M7 |
|--------------------|-----|--|----|

Rating data for approved types

| | | | |
|------------------------------|--|----|--------|
| Switching capacity | | | |
| Maximum motor rating | | | |
| Three-phase | | | |
| 200 V 208 V | | HP | 5 |
| 230 V 240 V | | HP | 5 |
| 460 V 480 V | | HP | 10 |
| 575 V 600 V | | HP | 15 |
| Single-phase | | | |
| 115 V 120 V | | HP | 2 |
| 230 V 240 V | | HP | 3 |
| 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 | 125/70 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 | 108 |
| FLA 480V 60Hz 3phase | A | 18 |
| Elevator Control | | |
| 200V 60Hz 3phase | HP | 3 |
| 200V 60Hz 3phase | A | 11 |
| 240V 60Hz 3phase | HP | 3 |
| 240V 60Hz 3phase | A | 9.6 |
| 480V 60Hz 3phase | HP | 7.5 |
| 480V 60Hz 3phase | A | 11 |
| 600V 60Hz 3phase | HP | 10 |
| 600V 60Hz 3phase | A | 11 |

Design verification as per IEC/EN 61439

| | | | |
|--|------------|----|--|
| Technical data for design verification | | | |
| Rated operational current for specified heat dissipation | I_n | A | 7 |
| Heat dissipation per pole, current-dependent | P_{vid} | W | 0.1 |
| Equipment heat dissipation, current-dependent | P_{vid} | W | 0.3 |
| 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. |
| 10.2.3.1 Verification of thermal stability of enclosures | | | Meets the product standard's requirements. |
| 10.2.3.2 Verification of resistance of insulating materials to normal heat | | | 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. |

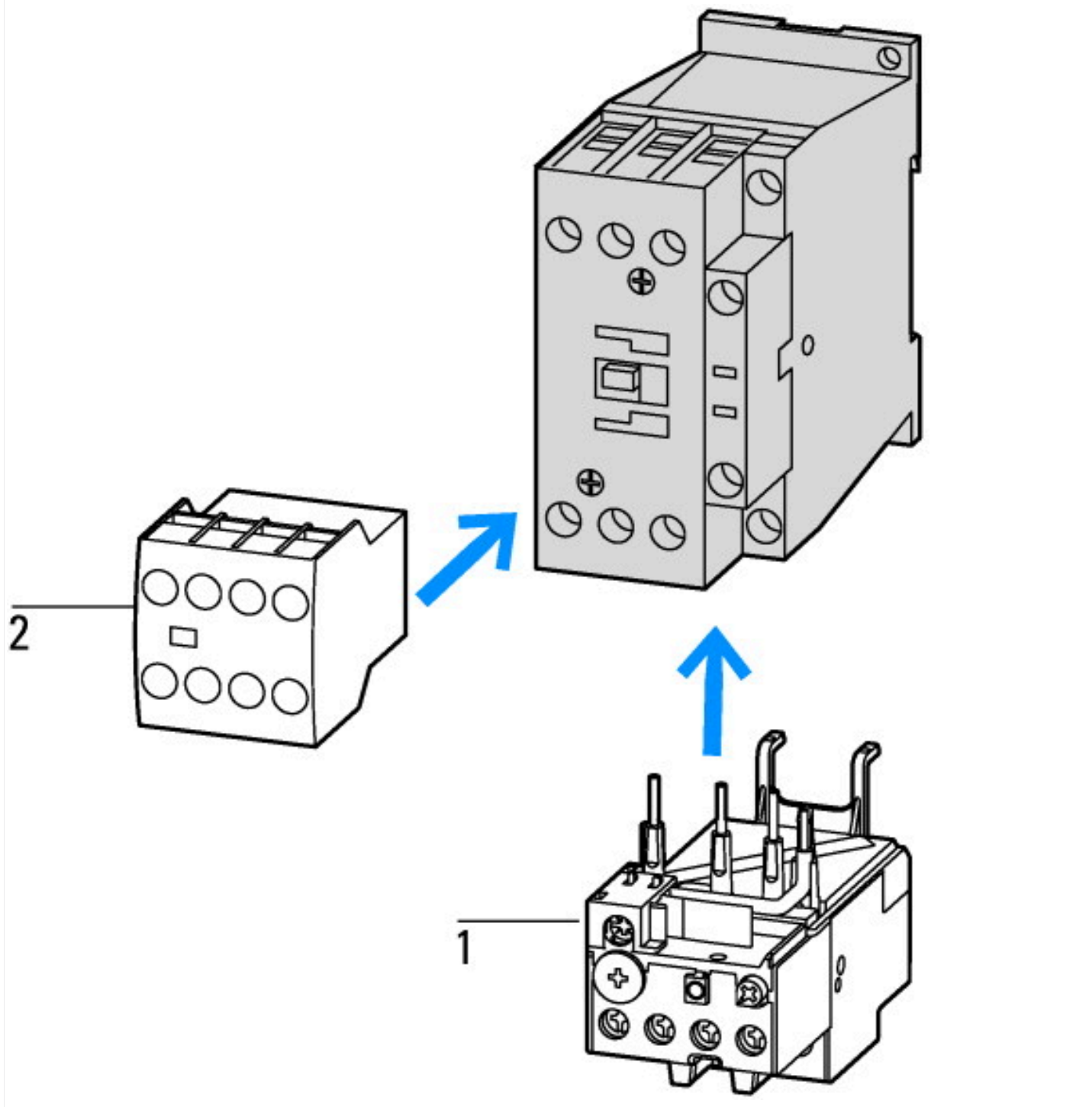
| | | |
|--|--|--|
| 10.2.7 Inscriptions | | Meets the product standard's requirements. |
| 10.3 Degree of protection of ASSEMBLIES | | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.4 Clearances and creepage distances | | Meets the product standard's requirements. |
| 10.5 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 7.0

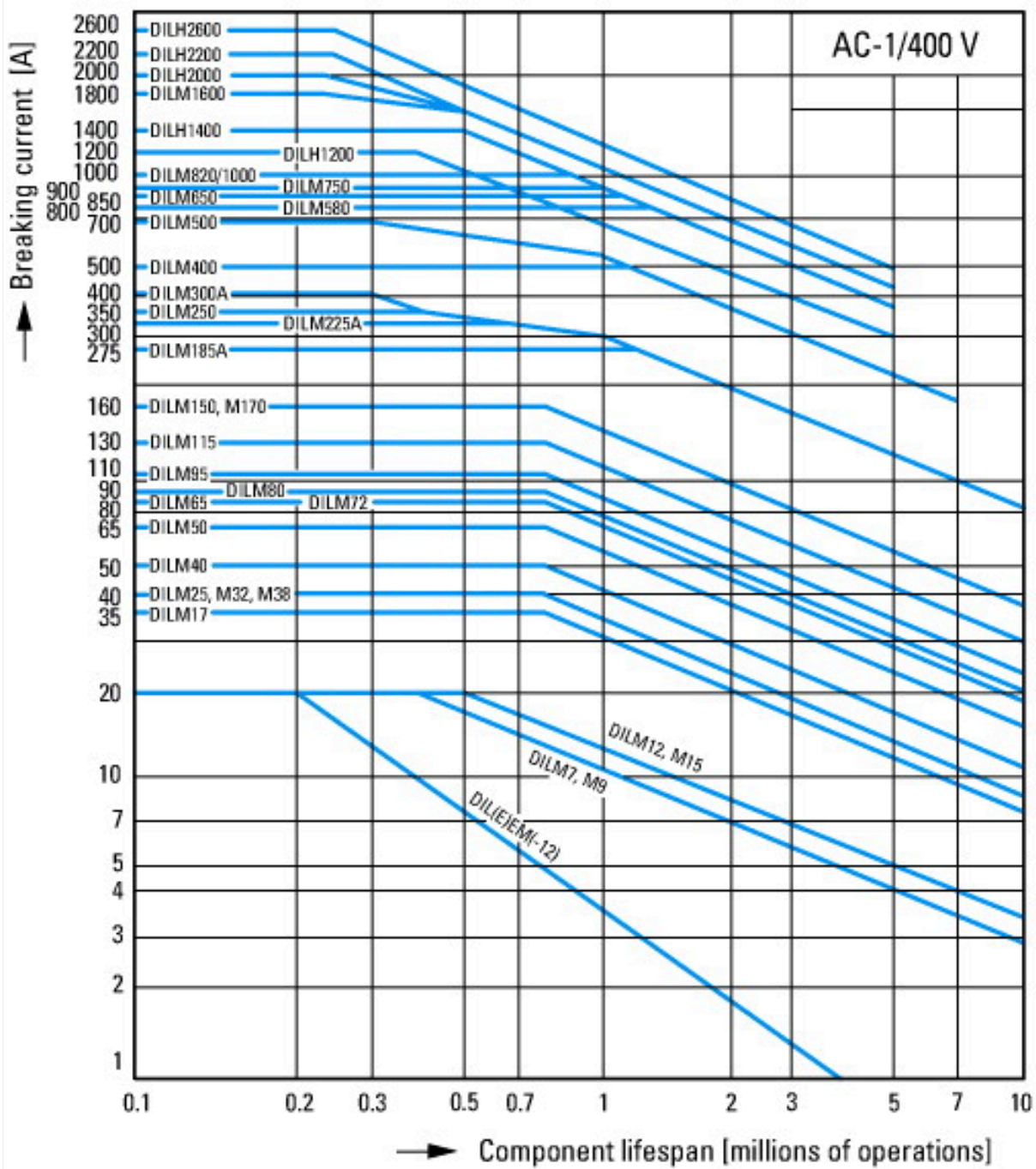
| | | |
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| Low-voltage industrial components (EG000017) / Power contactor, AC switching (EC000066) | | |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, AC switching (ecl@ss10.0.1-27-37-10-03 [AAB718015]) | | |
| Rated control supply voltage 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 | 20 |
| Rated operation current Ie at AC-3, 400 V | A | 7 |
| Rated operation power at AC-3, 400 V | kW | 3 |
| Rated operation current Ie at AC-4, 400 V | A | 5 |
| Rated operation power at AC-4, 400 V | kW | 2.2 |
| Rated operation power NEMA | kW | 7.4 |
| 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 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 |



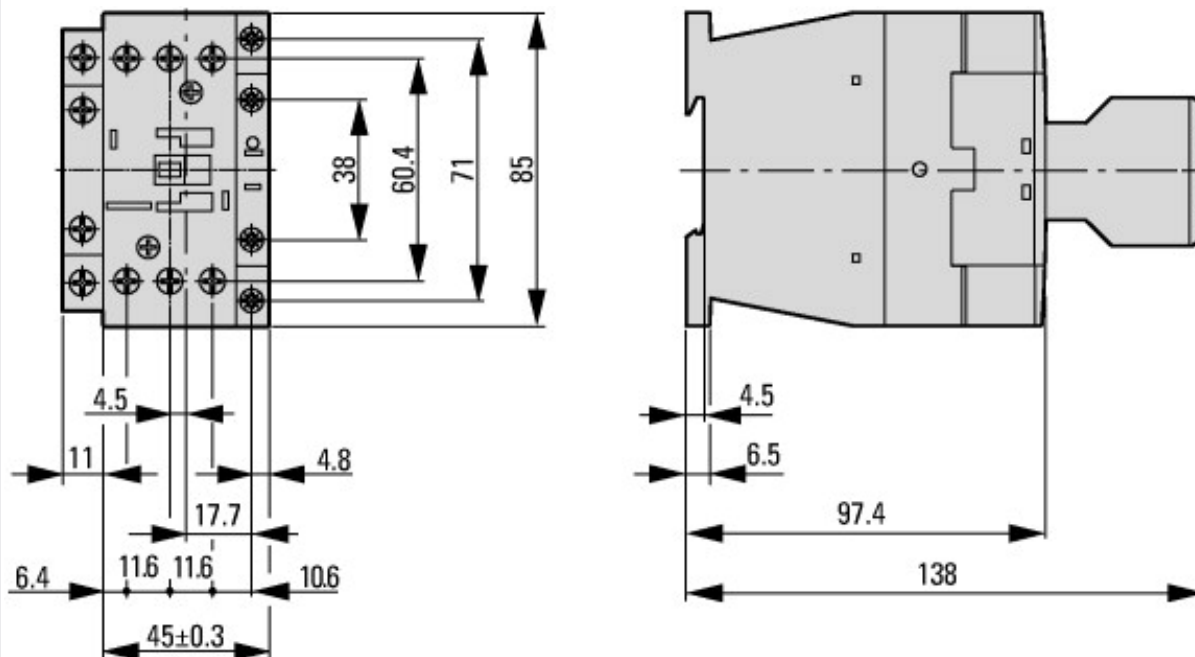
1: Overload relay
2: Auxiliary contact module



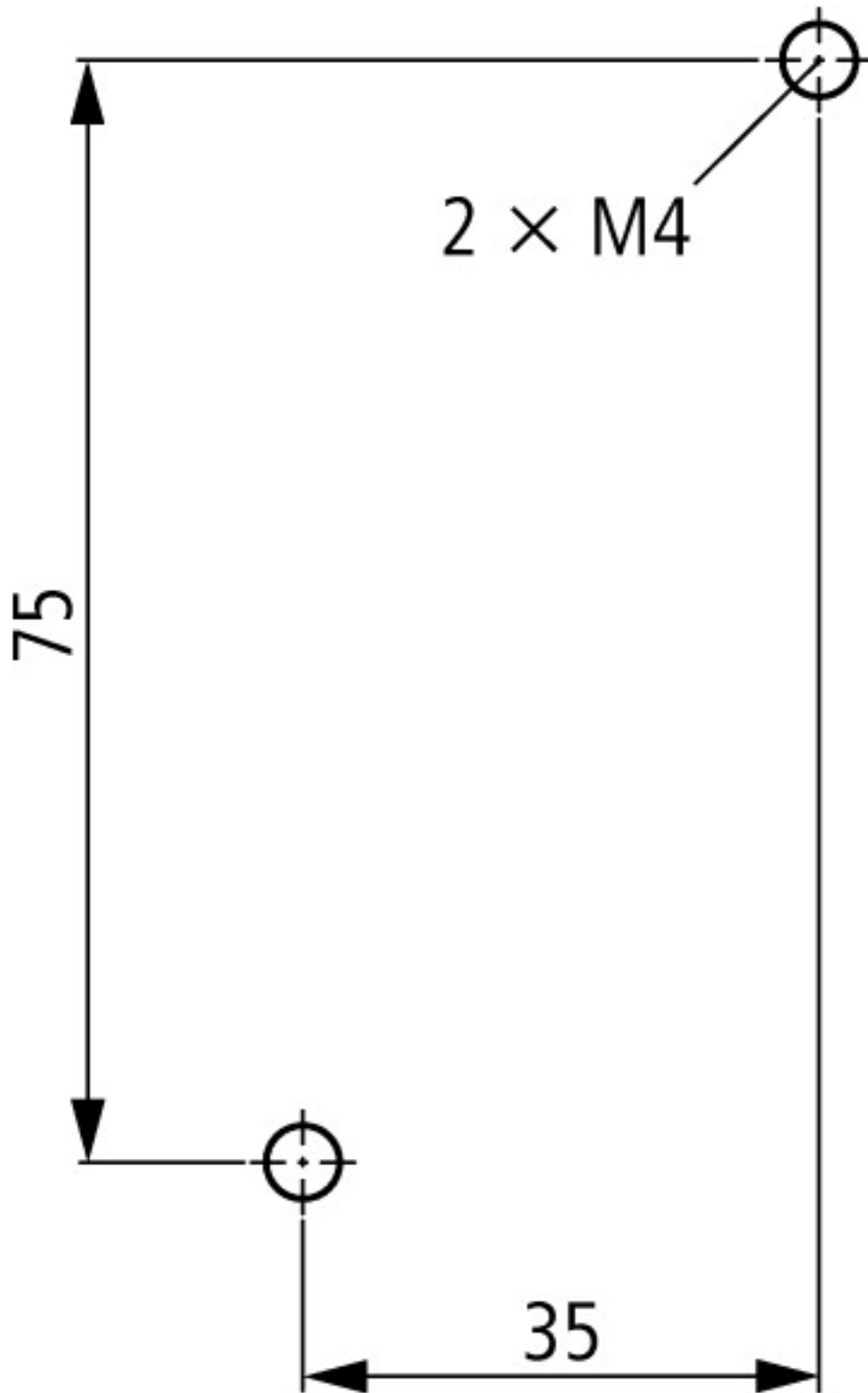
Switching conditions for non-motor consumers, 3 pole, 4 pole
 Operating characteristics
 Non inductive and slightly inductive loads
 Electrical characteristics
 Switch on: 1 x rated operational current
 Switch off: 1 x rated operational current
 Utilization category
 100 % AC-1
 Typical examples of application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



Dimensions



Contactors with auxiliary contact module



distance at side to earthed parts: 6 mm

Assets (links)

Declaration of CE Conformity

00003050

Instruction Leaflets

IL03407014Z2018_07

Additional product information (links)

IL03407014Z (AWA2100-2127) Contactor

| | |
|--|---|
| IL03407014Z (AWA2100-2127) Contactor | ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407014Z2018_07.pdf |
| Motor starters and "Special Purpose Ratings" for the North American market | http://www.eaton.eu/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct_3258146.pdf |
| Switchgear of Power Factor Correction Systems | 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 |
| Mirror Contacts for Highly-Reliable Information Relating to Safety-Related Control Functions | 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 |
| Switchgear for Luminaires | http://www.moeller.net/binary/ver_techpapers/ver955en.pdf |
| Standard Compliant and Functionally Safe Engineering Design with Mechanical Auxiliary Contacts | http://www.moeller.net/binary/ver_techpapers/ver956en.pdf |
| The Interaction of Contactors with PLCs | http://www.moeller.net/binary/ver_techpapers/ver957en.pdf |
| Busbar Component Adapters for modern Industrial control panels | http://www.moeller.net/binary/ver_techpapers/ver960en.pdf |