



**Contactor, 3p, 150HP/600VAC, SEMI F47**

**Part no.** DILMF150(RAC240)  
**Catalog No.** 104485  
**Eaton Catalog No.** XTCE150G00B-F47

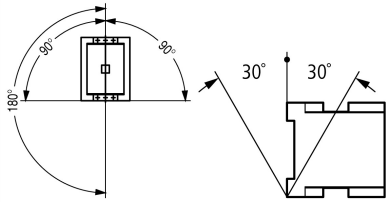


## Delivery program

|                                                           |                |    |                                                                                                                                                                                                                            |
|-----------------------------------------------------------|----------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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  | 150                                                                                                                                                                                                                        |
| AC-1                                                      |                |    |                                                                                                                                                                                                                            |
| Conventional free air thermal current, 3 pole, 50 - 60 Hz |                |    |                                                                                                                                                                                                                            |
| Open                                                      |                |    |                                                                                                                                                                                                                            |
| at 40 °C                                                  | $I_{th} = I_e$ | A  | 190                                                                                                                                                                                                                        |
| enclosed                                                  | $I_{th}$       | A  | 144                                                                                                                                                                                                                        |
| Conventional free air thermal current, 1 pole             |                |    |                                                                                                                                                                                                                            |
| open                                                      | $I_{th}$       | A  | 400                                                                                                                                                                                                                        |
| enclosed                                                  | $I_{th}$       | A  | 360                                                                                                                                                                                                                        |
| <b>Max. rating for three-phase motors, 50 - 60 Hz</b>     |                |    |                                                                                                                                                                                                                            |
| AC-3                                                      |                |    |                                                                                                                                                                                                                            |
| 220 V 230 V                                               | P              | kW | 48                                                                                                                                                                                                                         |
| 380 V 400 V                                               | P              | kW | 75                                                                                                                                                                                                                         |
| 660 V 690 V                                               | P              | kW | 96                                                                                                                                                                                                                         |
| AC-4                                                      |                |    |                                                                                                                                                                                                                            |
| 220 V 230 V                                               | P              | kW | 20                                                                                                                                                                                                                         |
| 380 V 400 V                                               | P              | kW | 33                                                                                                                                                                                                                         |
| 660 V 690 V                                               | P              | kW | 48                                                                                                                                                                                                                         |
| Contact sequence                                          |                |    |                                                                                                                                                                                                                            |
| Instructions                                              |                |    | Contacts to EN 50 012.<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   | 190 |
| at 50 °C                                                  | $I_{th} = I_e$ | A   | 180 |
| at 60 °C                                                  | $I_{th} = I_e$ | A   | 160 |
| enclosed                                                  | $I_{th}$       | A   | 144 |
| Conventional free air thermal current, 1 pole             |                |     |     |
| open                                                      | $I_{th}$       | A   | 400 |
| enclosed                                                  | $I_{th}$       | A   | 360 |
| AC-3                                                      |                |     |     |
| Rated operational current                                 |                |     |     |
| Open, 3-pole: 50 – 60 Hz                                  |                |     |     |
| 220 V 230 V                                               | $I_e$          | A   | 150 |
| 240 V                                                     | $I_e$          | A   | 150 |
| 380 V 400 V                                               | $I_e$          | A   | 150 |
| 415 V                                                     | $I_e$          | A   | 150 |
| 440V                                                      | $I_e$          | A   | 150 |
| 500 V                                                     | $I_e$          | A   | 150 |
| 660 V 690 V                                               | $I_e$          | A   | 100 |
| Motor rating                                              | P              | kWh |     |
| 220 V 230 V                                               | P              | kW  | 48  |
| 240V                                                      | P              | kW  | 52  |
| 380 V 400 V                                               | P              | kW  | 75  |
| 415 V                                                     | P              | kW  | 91  |
| 440 V                                                     | P              | kW  | 95  |
| 500 V                                                     | P              | kW  | 110 |
| 660 V 690 V                                               | P              | kW  | 96  |
| AC-4                                                      |                |     |     |
| Open, 3-pole: 50 – 60 Hz                                  |                |     |     |
| 220 V 230 V                                               | $I_e$          | A   | 65  |
| 240 V                                                     | $I_e$          | A   | 65  |
| 380 V 400 V                                               | $I_e$          | A   | 65  |
| 415 V                                                     | $I_e$          | A   | 65  |
| 440 V                                                     | $I_e$          | A   | 65  |
| 500 V                                                     | $I_e$          | A   | 65  |
| 660 V 690 V                                               | $I_e$          | A   | 50  |
| Motor rating                                              | P              | kWh |     |
| 220 V 230 V                                               | P              | kW  | 20  |
| 240 V                                                     | P              | kW  | 22  |
| 380 V 400 V                                               | P              | kW  | 33  |
| 415 V                                                     | P              | kW  | 39  |
| 440 V                                                     | P              | kW  | 41  |
| 500 V                                                     | P              | kW  | 47  |

|                                                                        |          |                  |                         |
|------------------------------------------------------------------------|----------|------------------|-------------------------|
| 660 V 690 V                                                            | P        | kW               | 48                      |
| <b>Current heat loss</b>                                               |          |                  |                         |
| 3 pole, at I <sub>th</sub> (60°)                                       |          | W                | 46.1                    |
| Current heat loss at I <sub>g</sub> to AC-3/400 V                      |          | W                | 40.5                    |
| <b>Magnet systems</b>                                                  |          |                  |                         |
| Voltage tolerance                                                      |          |                  |                         |
| AC operated                                                            | Pick-up  | x U <sub>c</sub> | 0.8 - 1.15              |
| Drop-out voltage AC operated                                           | Drop-out | x U <sub>c</sub> | 0.2 - 0.5               |
| Power consumption of the coil in a cold state and 1.0 x U <sub>S</sub> |          |                  |                         |
| Electronic actuation                                                   | Pick-up  | VA               | 180                     |
| Electronic actuation                                                   | Sealing  | VA               | 3.1                     |
| Electronic actuation                                                   | Sealing  | W                | 2.1                     |
| Duty factor                                                            |          | % DF             | 100                     |
| Operating times                                                        |          |                  |                         |
| Closing delay                                                          |          | ms               | 40                      |
| Opening delay                                                          |          | ms               | 40                      |
| -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      |                  | M150                    |
| <b>Rating data for approved types</b>                                  |          |                  |                         |
| Switching capacity                                                     |          |                  |                         |
| Maximum motor rating                                                   |          |                  |                         |
| Three-phase                                                            |          |                  |                         |
| 200 V<br>208 V                                                         |          | HP               | 50                      |
| 230 V<br>240 V                                                         |          | HP               | 60                      |
| 460 V<br>480 V                                                         |          | HP               | 125                     |
| 575 V<br>600 V                                                         |          | HP               | 125                     |
| Single-phase                                                           |          |                  |                         |
| 115 V<br>120 V                                                         |          | HP               | 10                      |
| 230 V<br>240 V                                                         |          | HP               | 30                      |
| General use                                                            |          | A                | 225                     |
| Short Circuit Current Rating                                           |          | SCCR             |                         |
| Basic Rating                                                           |          |                  |                         |
| SCCR                                                                   |          | kA               | 10                      |
| max. Fuse                                                              |          | A                | 600                     |
| max. CB                                                                |          | A                | 600                     |
| 480 V High Fault                                                       |          |                  |                         |
| SCCR (fuse)                                                            |          | kA               | 30/100                  |
| max. Fuse                                                              |          | A                | 300/300 Class J         |
| SCCR (CB)                                                              |          | kA               | 65                      |
| max. CB                                                                |          | A                | 250                     |
| 600 V High Fault                                                       |          |                  |                         |
| SCCR (fuse)                                                            |          | kA               | 30/100                  |
| max. Fuse                                                              |          | A                | 300/600 Class J         |
| SCCR (CB)                                                              |          | kA               | 30                      |
| max. CB                                                                |          | A                | 350                     |
| Special Purpose Ratings                                                |          |                  |                         |
| Electrical Discharge Lamps (Ballast)                                   |          |                  |                         |
| 480V 60Hz 3phase, 277V 60Hz 1phase                                     |          | A                | 160                     |

|                                                           |    |     |
|-----------------------------------------------------------|----|-----|
| 600V 60Hz 3phase, 347V 60Hz 1phase                        | A  | 160 |
| Incandescent Lamps (Tungsten)                             |    |     |
| 480V 60Hz 3phase, 277V 60Hz 1phase                        | A  | 160 |
| 600V 60Hz 3phase, 347V 60Hz 1phase                        | A  | 160 |
| Resistance Air Heating                                    |    |     |
| 480V 60Hz 3phase, 277V 60Hz 1phase                        | A  | 160 |
| 600V 60Hz 3phase, 347V 60Hz 1phase                        | A  | 160 |
| Refrigeration Control (CSA only)                          |    |     |
| LRA 480V 60Hz 3phase                                      | A  | 540 |
| FLA 480V 60Hz 3phase                                      | A  | 90  |
| LRA 600V 60Hz 3phase                                      | A  | 540 |
| FLA 600V 60Hz 3phase                                      | A  | 90  |
| Definite Purpose Ratings (100,000 cycles acc. to UL 1995) |    |     |
| LRA 480V 60Hz 3phase                                      | A  | 900 |
| FLA 480V 60Hz 3phase                                      | A  | 150 |
| Elevator Control                                          |    |     |
| 200V 60Hz 3phase                                          | HP | 30  |
| 200V 60Hz 3phase                                          | A  | 92  |
| 240V 60Hz 3phase                                          | HP | 40  |
| 240V 60Hz 3phase                                          | A  | 104 |
| 480V 60Hz 3phase                                          | HP | 75  |
| 480V 60Hz 3phase                                          | A  | 96  |
| 600V 60Hz 3phase                                          | HP | 100 |
| 600V 60Hz 3phase                                          | A  | 99  |

## Design verification as per IEC/EN 61439

|                                                                                                                        |                   |    |                                                                    |
|------------------------------------------------------------------------------------------------------------------------|-------------------|----|--------------------------------------------------------------------|
| Technical data for design verification                                                                                 |                   |    |                                                                    |
| Rated operational current for specified heat dissipation                                                               | I <sub>n</sub>    | A  | 150                                                                |
| Heat dissipation per pole, current-dependent                                                                           | P <sub>vid</sub>  | W  | 10.7                                                               |
| Equipment heat dissipation, current-dependent                                                                          | P <sub>vid</sub>  | W  | 32.1                                                               |
| Static heat dissipation, non-current-dependent                                                                         | P <sub>vs</sub>   | W  | 2.3                                                                |
| Heat dissipation capacity                                                                                              | P <sub>diss</sub> | 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.                             |

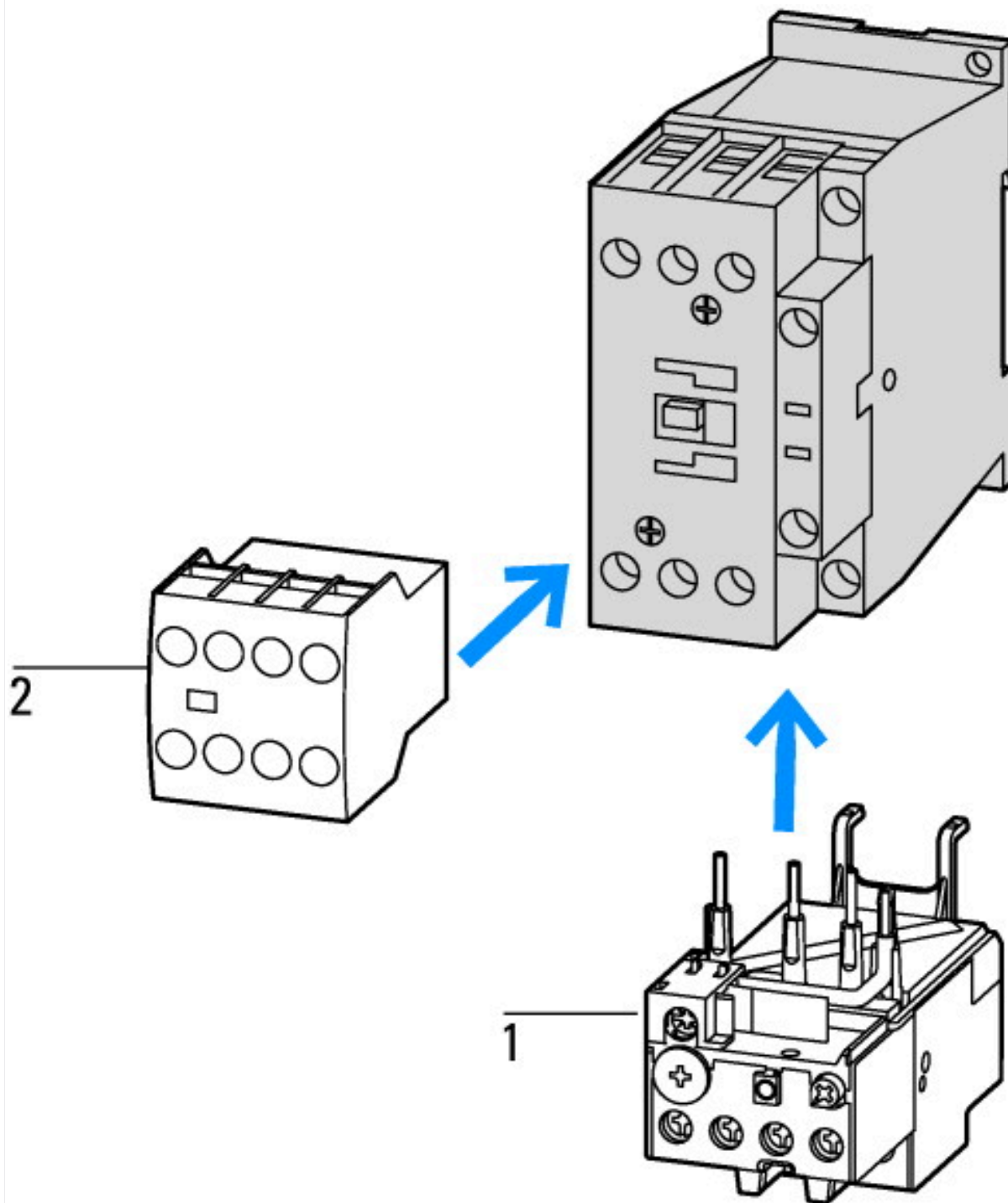
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|-------------------------------------|--|--|----------------------------------------------------------------------------------------------------------------------------------|
| 10.10 Temperature rise              |  |  | The panel builder is responsible 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

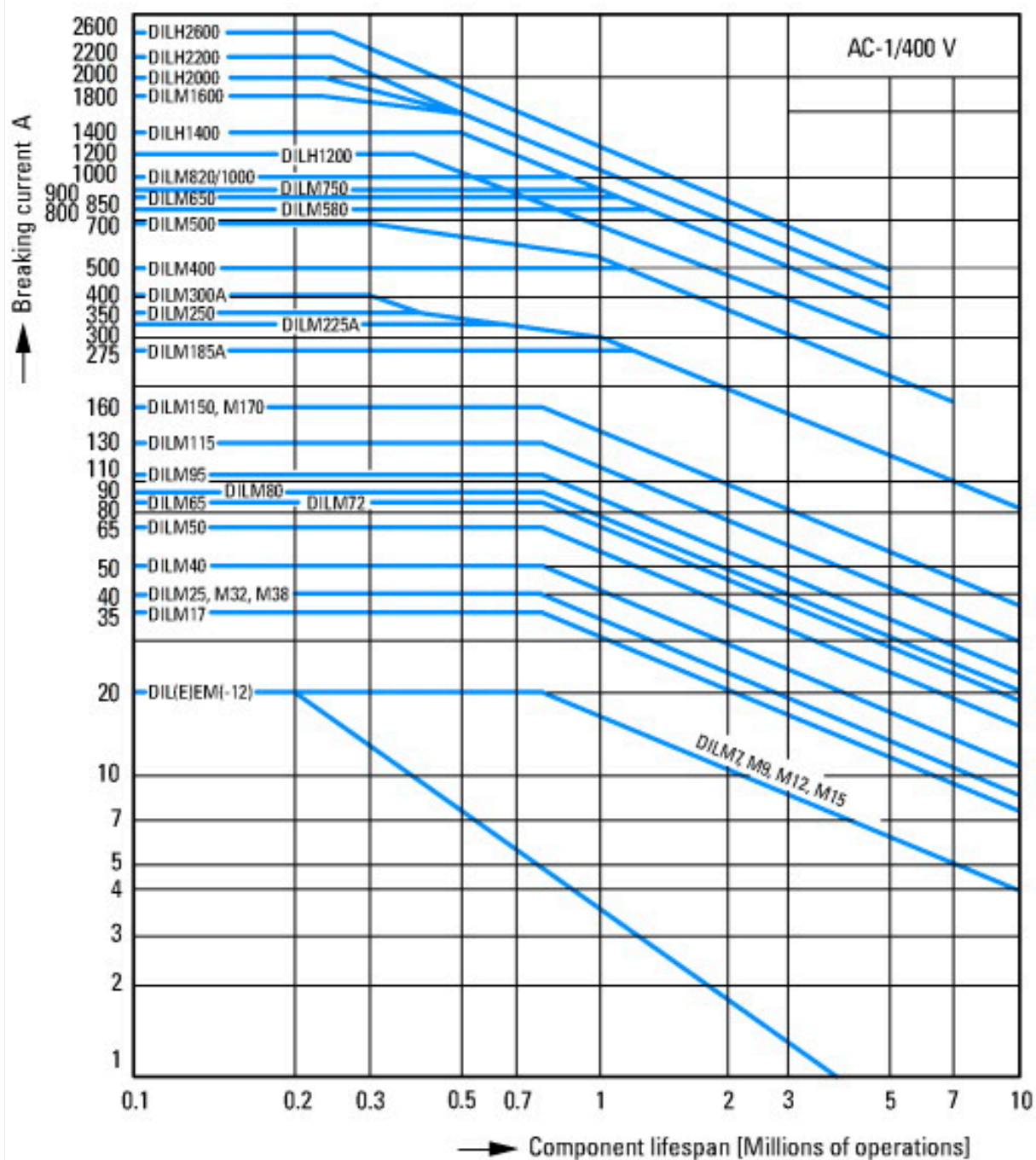
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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|--|------------------|
| Low-voltage industrial components (EG000017) / Power contactor, AC switching (EC000066)                                                                                            |    |  |                  |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, AC switching (ecI@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  |  | 160              |
| Rated operation current Ie at AC-3, 400 V                                                                                                                                          | A  |  | 150              |
| Rated operation power at AC-3, 400 V                                                                                                                                               | kW |  | 75               |
| Rated operation current Ie at AC-4, 400 V                                                                                                                                          | A  |  | 65               |
| Rated operation power Ie at AC-4, 400 V                                                                                                                                            | kW |  | 33               |
| Modular version                                                                                                                                                                    |    |  | No               |
| Number of auxiliary contacts as normally open contact                                                                                                                              |    |  | 0                |
| 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

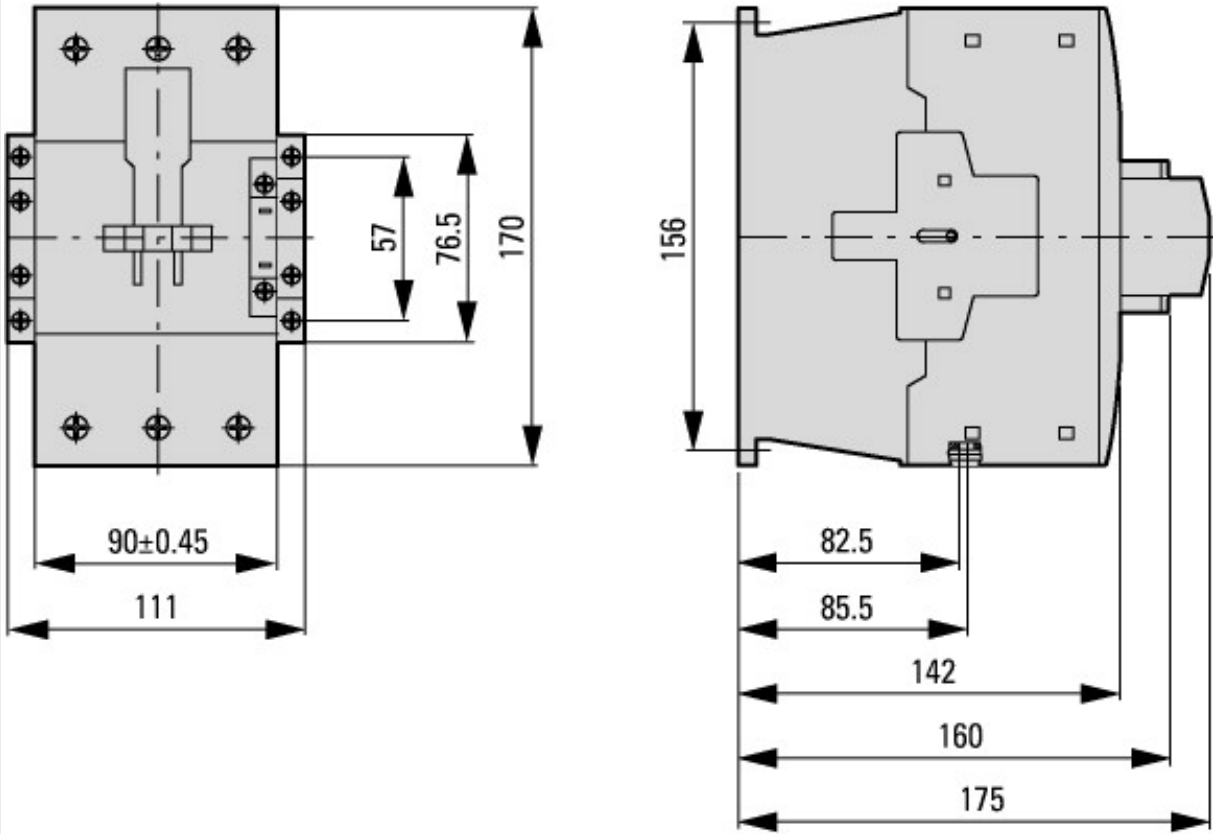
Utilization category

100 % AC-1

Typical examples of application

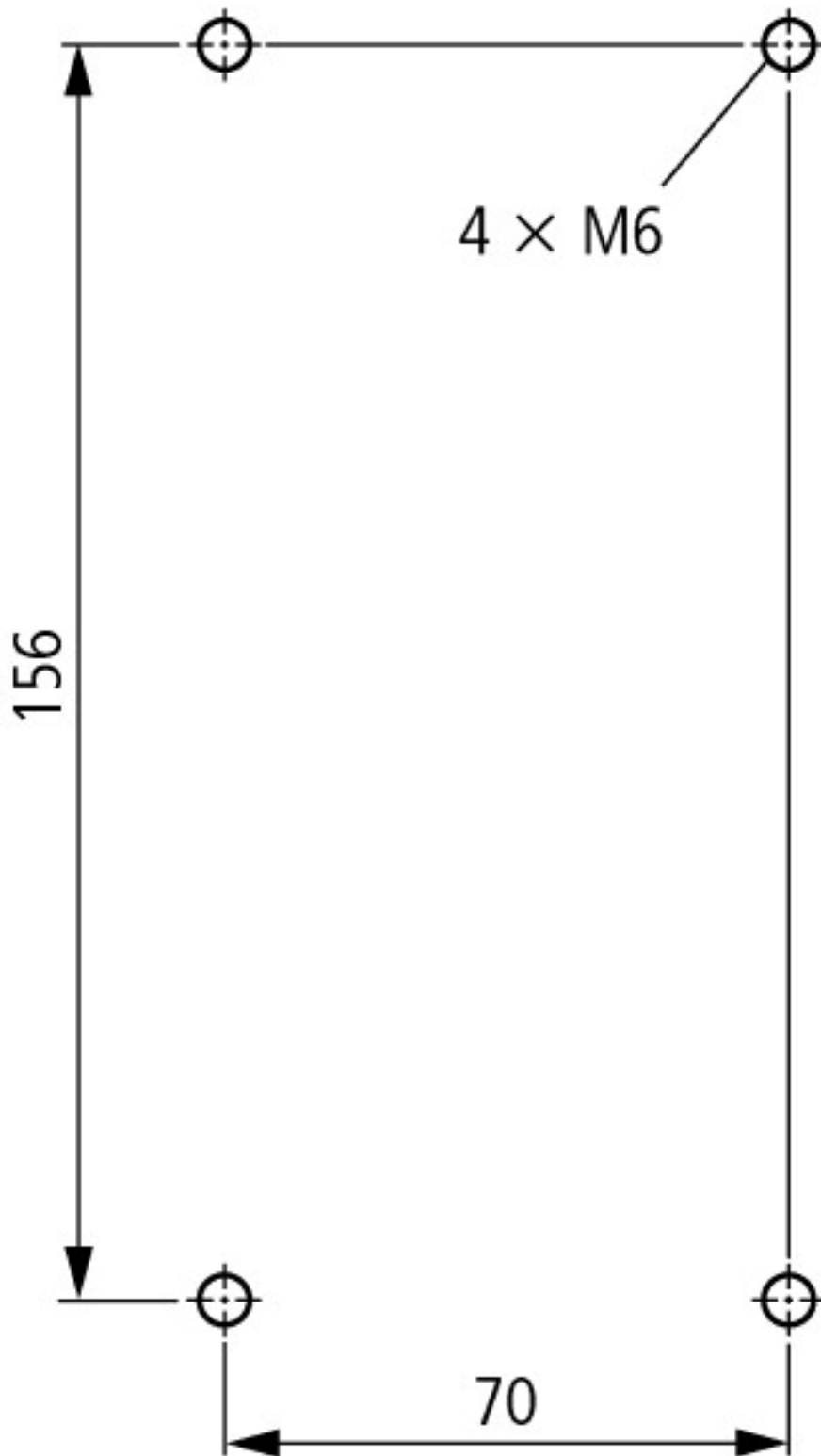
Electric heat

Dimensions



Contactor with auxiliary contact module





seitlicher Abstand zu geerdeten Teilen: 10 mm

## Assets (Links)

### Declaration of Conformity

00002559

### Instruction Leaflets

IL03407039Z2010\_10

## Additional product information (links)

### IL03407039Z (AWA2100-2286) Contactors

|                                                                                |                                                                                                                                                                       |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IL03407039Z (AWA2100-2286) Contactors                                          | <a href="ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407039Z2010_10.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407039Z2010_10.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 Cable 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> |
| Motor starters and "Special Purpose Ratings" for the North American market                     | <a href="http://www.moeller.net/binary/ver_techpapers/ver953en.pdf">http://www.moeller.net/binary/ver_techpapers/ver953en.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> |