



**Contactor, 3p+1N/O, 3kW/400V/AC3**

**Part no.**

**DILM7-10(24VDC)**

**Article no.**

**276565**

**Catalog No.**

**XTCE007B10TD**



Powering Business Worldwide™



## Delivery programme

|                      |  |  |                                                                                                                                                                                                                            |
|----------------------|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product range        |  |  | Contactors                                                                                                                                                                                                                 |
| Application          |  |  | Contactors for Motors                                                                                                                                                                                                      |
| Subrange             |  |  | Contactors up to 170 A, 3 pole                                                                                                                                                                                             |
| 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 |
|                      |  |  | <b>IE3</b>                                                                                                                                                                                                                 |
| 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                                                                                                                                                                                                            |
| Pole                 |  |  | 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

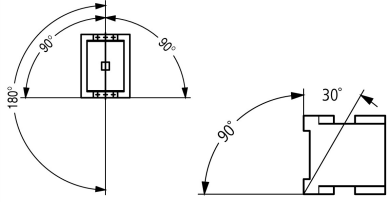
|             |   |    |     |
|-------------|---|----|-----|
| AC-3        |   |    |     |
| 220 V 230 V | P | kW | 2.2 |
| 380 V 400 V | P | kW | 3   |
| 660 V 690 V | P | kW | 3.5 |
| AC-4        |   |    |     |
| 220 V 230 V | P | kW | 1   |
| 380 V 400 V | P | kW | 2.2 |
| 660 V 690 V | P | kW | 2.9 |

## Contacts

|                                        |  |  |                                                                  |
|----------------------------------------|--|--|------------------------------------------------------------------|
| N/O = Normally open                    |  |  | 1 N/O                                                            |
| Contact sequence                       |  |  |                                                                  |
| Instructions                           |  |  | Contacts to EN 50012.<br>Integrated varistor suppressor circuit. |
| Can be combined with auxiliary contact |  |  | DILM32-XHI..<br>DILA-XHI(V)..                                    |
| Voltage AC/DC                          |  |  | DC operation                                                     |

## Technical data

|                      |            |               |                                 |
|----------------------|------------|---------------|---------------------------------|
| Standards            |            |               | IEC/EN 60947, VDE 0660, UL, CSA |
| Lifespan, mechanical |            |               |                                 |
| AC operated          | Operations | $\times 10^6$ | 10                              |

|                                                                                    |                 |                   |                                      |
|------------------------------------------------------------------------------------|-----------------|-------------------|--------------------------------------|
| DC operated                                                                        | Operations      | x 10 <sup>6</sup> | 10                                   |
| Operating frequency, mechanical                                                    |                 |                   |                                      |
| AC operated                                                                        | Operations/h    |                   | 5000                                 |
| DC operated                                                                        | Operations/h    |                   | 5000                                 |
| Climatic proofing                                                                  |                 |                   |                                      |
| 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               |                   | 5.7                                  |
| Auxiliary contacts                                                                 |                 |                   |                                      |
| N/O contact                                                                        | g               |                   | 3.4                                  |
| N/C contact                                                                        | g               |                   | 3.4                                  |
| Degree of Protection                                                               |                 |                   |                                      |
| Protection against direct contact when actuated from front (EN 50274)              |                 |                   |                                      |
| Finger and back-of-hand proof                                                      |                 |                   |                                      |
| Weight                                                                             |                 |                   |                                      |
| AC operated                                                                        | kg              |                   | 0.23                                 |
| DC operated                                                                        | kg              |                   | 0.28                                 |
| Terminal capacity main cable                                                       |                 |                   |                                      |
| Solid                                                                              | mm <sup>2</sup> |                   | 1 x (0.75 - 4)<br>2 x (0.75 - 2.5)   |
| Flexible with ferrule                                                              | mm <sup>2</sup> |                   | 1 x (0.75 - 2.5)<br>2 x (0.75 - 2,5) |
|                                                                                    |                 |                   | Also without ferrule.                |
| Solid or stranded                                                                  | AWG             |                   | 18 - 10                              |
| Main cable connection screw/bolt                                                   |                 |                   |                                      |
| M3.5                                                                               |                 |                   |                                      |
| Tightening torque                                                                  |                 |                   |                                      |
| Nm                                                                                 |                 |                   |                                      |
| 1.2                                                                                |                 |                   |                                      |
| Terminal capacity control circuit cables                                           |                 |                   |                                      |
| Solid                                                                              | mm <sup>2</sup> |                   | 1 x (0.75 - 4)<br>2 x (0.75 - 2.5)   |
| Flexible with ferrule                                                              | mm <sup>2</sup> |                   | 1 x (0.75 - 1.5)<br>2 x (0.75 - 1.5) |
| 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<br>1 x 6                   |
| Control circuit cables                                                             |                 |                   |                                      |

|                      |      |                    |
|----------------------|------|--------------------|
| Pozidriv screwdriver | Size | 2                  |
| Standard screwdriver | mm   | 0.8 x 5.5<br>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 | 400   |
| between the contacts                   |             | V AC | 400   |
| Making capacity (p.f. to IEC/EN 60947) |             |      |       |
|                                        | Up to 690 V | A    | 112   |
| Breaking capacity                      |             |      |       |
| 220 V 230 V                            |             | A    | 70    |
| 380 V 400 V                            |             | A    | 70    |
| 500 V                                  |             | A    | 50    |
| 660 V 690 V                            |             | A    | 40    |
| Short-circuit rating                   |             |      |       |
| Short-circuit protection maximum fuse  |             |      |       |
| Type "2" coordination                  |             |      |       |
| 400 V                                  | gG/gL 500 V | A    | 20    |
| 690 V                                  | gG/gL 690 V | A    | 16    |
| Type "1" coordination                  |             |      |       |
| 400 V                                  | gG/gL 500 V | A    | 35    |
| 690 V                                  | gG/gL 690 V | A    | 20    |

## 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 55 °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                                  |                |     |     |
| 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   |
| 380 V 400 V                                               | $I_e$          | A   | 7   |
| 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 <sub>e</sub> | A   | 5   |
| 240 V                    | I <sub>e</sub> | A   | 5   |
| 380 V 400 V              | I <sub>e</sub> | A   | 5   |
| 415 V                    | I <sub>e</sub> | A   | 5   |
| 440 V                    | I <sub>e</sub> | A   | 5   |
| 500 V                    | I <sub>e</sub> | A   | 4.5 |
| 660 V 690 V              | I <sub>e</sub> | 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 |

DC

|                                 |                |   |     |
|---------------------------------|----------------|---|-----|
| Rated operational current, open |                |   |     |
| DC-1                            |                |   |     |
| 60 V                            | I <sub>e</sub> | A | 20  |
| 110 V                           | I <sub>e</sub> | A | 20  |
| 220 V                           | I <sub>e</sub> | A | 15  |
| 440 V                           | I <sub>e</sub> | A | 1   |
| DC-3                            |                |   |     |
| 60 V                            | I <sub>e</sub> | A | 20  |
| 110 V                           | I <sub>e</sub> | A | 20  |
| 220 V                           | I <sub>e</sub> | A | 1.5 |
| 440 V                           | I <sub>e</sub> | A | 0.2 |
| DC-5                            |                |   |     |
| 60 V                            | I <sub>e</sub> | A | 20  |
| 110 V                           | I <sub>e</sub> | A | 20  |
| 220 V                           | I <sub>e</sub> | A | 1.5 |
| 440 V                           | I <sub>e</sub> | A | 0.2 |

Current heat loss

|                                                   |    |     |
|---------------------------------------------------|----|-----|
| 3-pole at I <sub>th</sub>                         | W  | 4.5 |
| Current heat loss at I <sub>e</sub> to AC-3/400 V | W  | 0.3 |
| Impedance per pole                                | mΩ | 4.6 |

Magnet systems

|                                                                        |          |                  |                                                                                                                                                                 |
|------------------------------------------------------------------------|----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Voltage tolerance                                                      |          | x U <sub>c</sub> |                                                                                                                                                                 |
| AC operated                                                            | Pick-up  | x U <sub>c</sub> | 0.8 - 1.1                                                                                                                                                       |
| Drop-out voltage AC operated                                           | Drop-out | x U <sub>c</sub> | 0.3 - 0.6                                                                                                                                                       |
| DC operated                                                            | Pick-up  | x U <sub>c</sub> | 0.8 - 1.1                                                                                                                                                       |
| Notes                                                                  |          |                  | 0.85 - 1.1 only with auxiliary contact module with 3 or more N/C contacts<br>0.7 – 1.3 without auxiliary contact module and at ambient air temperature + +40 °C |
| 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>c</sub> |          |                  |                                                                                                                                                                 |
| 50 Hz                                                                  | Pick-up  | VA               | 24                                                                                                                                                              |
| 50 Hz                                                                  | Sealing  | VA               | 3.4                                                                                                                                                             |
| 50 Hz                                                                  | Sealing  | W                | 1.2                                                                                                                                                             |

|                                                              |         |                   |                                                                                     |
|--------------------------------------------------------------|---------|-------------------|-------------------------------------------------------------------------------------|
| 60 Hz                                                        | Pick-up | VA                | 30                                                                                  |
| 60 Hz                                                        | Sealing | VA                | 4.4                                                                                 |
| 60 Hz                                                        | Sealing | W                 | 1.4                                                                                 |
| 50/60 Hz                                                     | Pick-up | VA                | 27<br>25                                                                            |
| 50/60 Hz                                                     | Sealing | VA                | 4.2<br>3.3                                                                          |
| 50/60 Hz                                                     | Sealing | W                 | 1.4<br>1.2                                                                          |
| DC operated                                                  | Pick-up | W                 | 3                                                                                   |
| DC operated                                                  | Sealing | W                 | 3                                                                                   |
| Duty factor                                                  |         | % DF              | 100                                                                                 |
| Switching times at 100 % U <sub>c</sub> (approximate values) |         |                   |                                                                                     |
| Main contacts                                                |         |                   |                                                                                     |
| AC operated                                                  |         |                   |                                                                                     |
| Closing delay                                                |         | ms                | 15 - 21                                                                             |
| Opening delay                                                |         | ms                | 9 - 18                                                                              |
| DC operated                                                  |         | ms                |                                                                                     |
| Closing delay                                                |         | ms                | 31                                                                                  |
| Opening delay                                                |         | ms                | 12                                                                                  |
| Arcing time                                                  |         | ms                | 10                                                                                  |
| Lifespan, mechanical; Coil 50/60 Hz                          |         | x 10 <sup>6</sup> | 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 |

## Design verification as per IEC/EN 61439

|                                                                                                                        |                   |    |                                                                    |
|------------------------------------------------------------------------------------------------------------------------|-------------------|----|--------------------------------------------------------------------|
| Technical data for design verification                                                                                 |                   |    |                                                                    |
| Rated operational current for specified heat dissipation                                                               | I <sub>n</sub>    | A  | 7                                                                  |
| Heat dissipation per pole, current-dependent                                                                           | P <sub>vid</sub>  | W  | 0.1                                                                |
| Equipment heat dissipation, current-dependent                                                                          | P <sub>vid</sub>  | W  | 0                                                                  |
| Static heat dissipation, non-current-dependent                                                                         | P <sub>vs</sub>   | W  | 2.6                                                                |
| 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.                             |

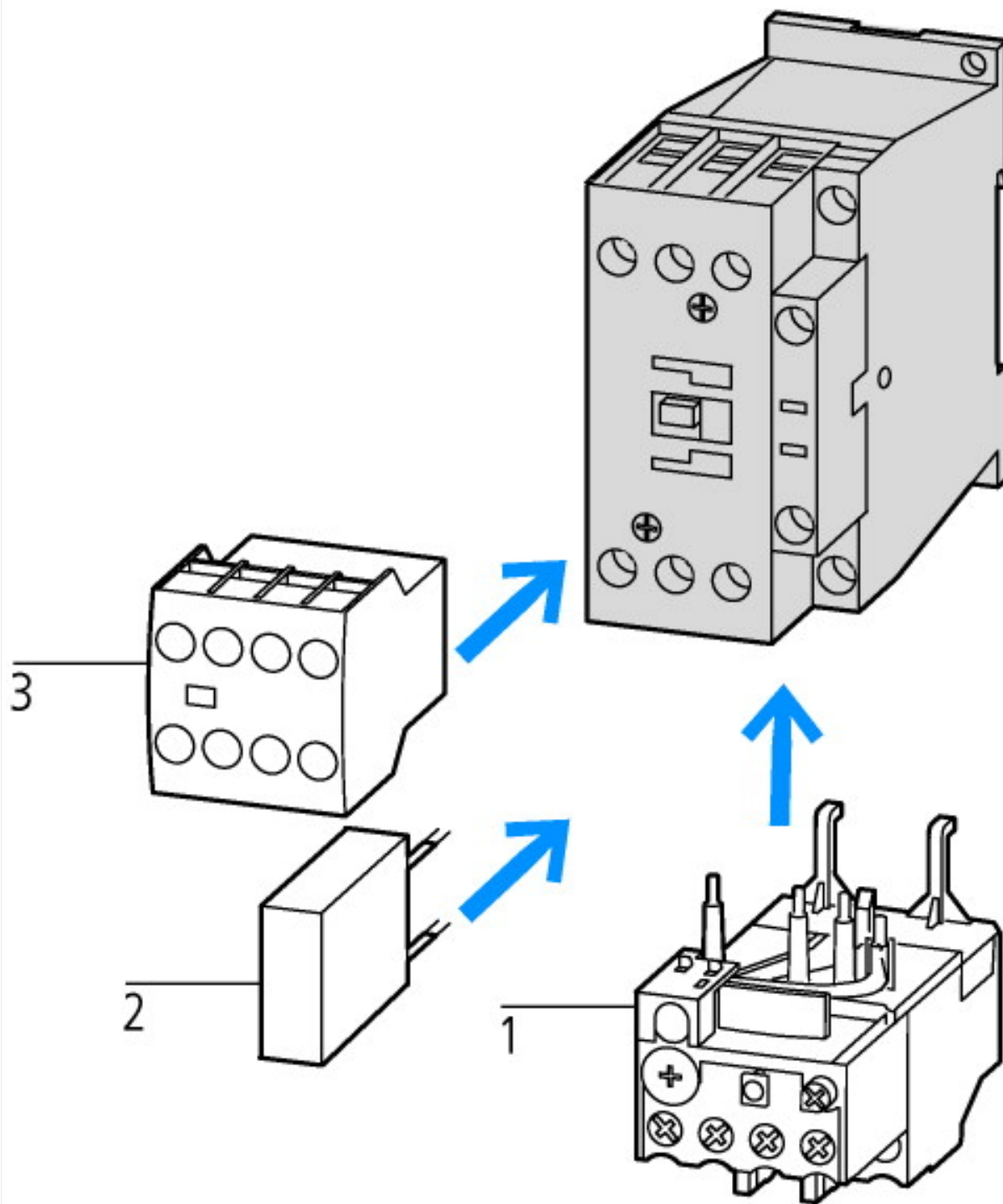
|                                     |  |  |                                                                                                                                  |
|-------------------------------------|--|--|----------------------------------------------------------------------------------------------------------------------------------|
| 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

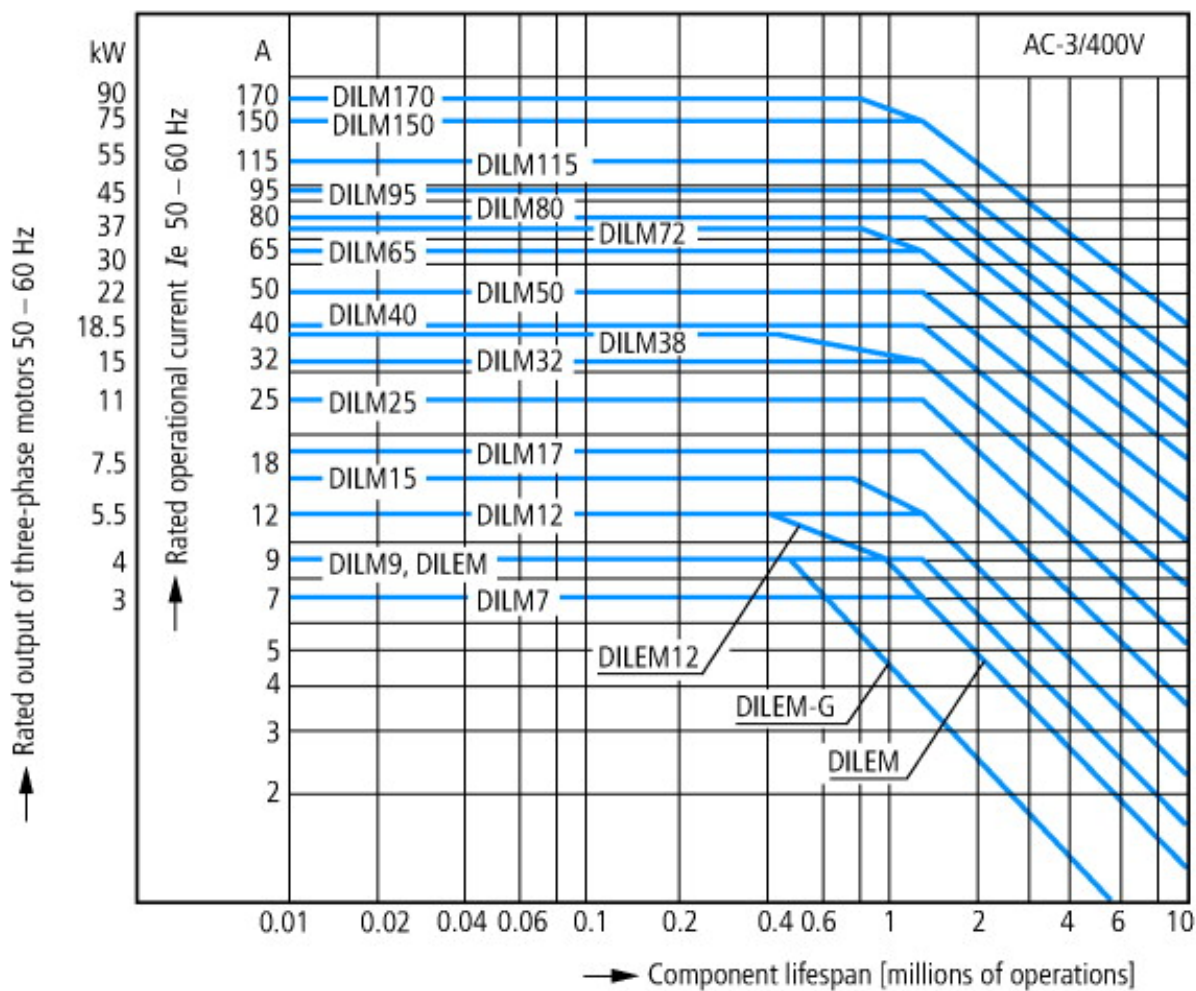
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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----|------------------|
| Low-voltage industrial components (EG000017) / 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  | 0 - 0            |
| Rated control supply voltage Us at AC 60HZ                                                                                                                                         |  | V  | 0 - 0            |
| Rated control supply voltage Us at DC                                                                                                                                              |  | V  | 24 - 24          |
| Voltage type for actuating                                                                                                                                                         |  |    | DC               |
| Rated operation current Ie at AC-1, 400 V                                                                                                                                          |  | A  | 14               |
| 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 Ie at AC-4, 400 V                                                                                                                                            |  | kW | 2.2              |
| 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

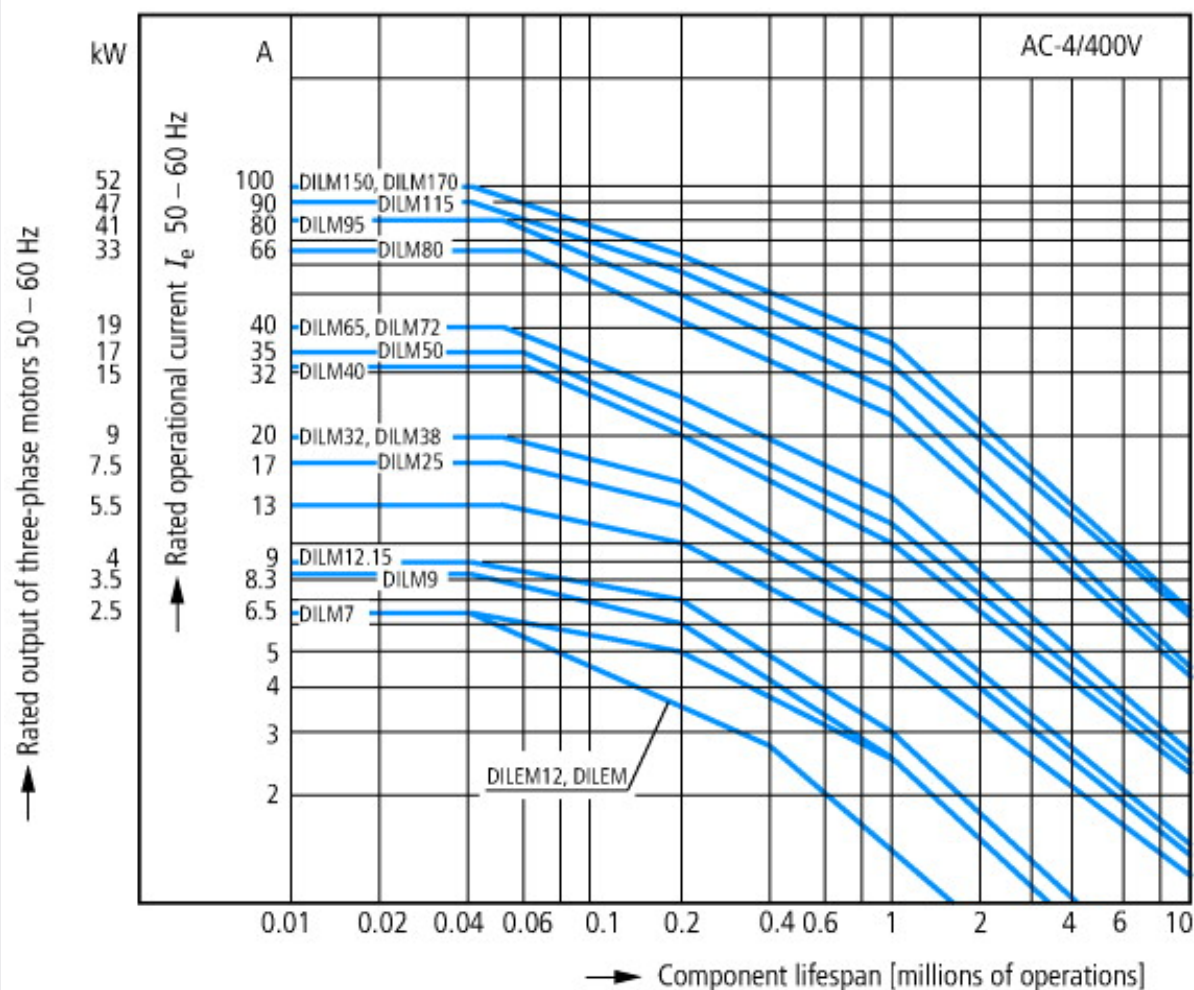
|                                      |  |  |                                                           |
|--------------------------------------|--|--|-----------------------------------------------------------|
| Product Standards                    |  |  | IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 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                                                        |



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

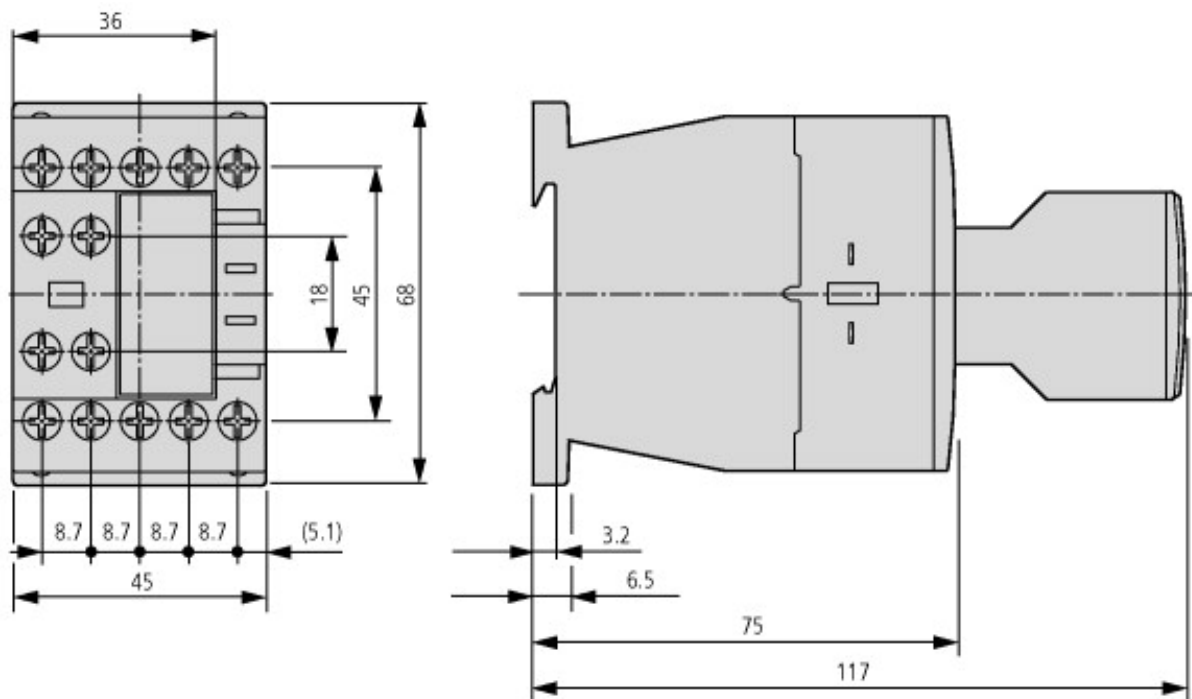


Squirrel-cage motor  
 Operating characteristics  
 Starting: from rest  
 Stopping: after attaining full running speed  
 Electrical characteristics  
 Make: up to 6 x rated motor current  
 Break: up to 1 x rated motor current  
 Utilization category  
 100 % AC-3  
 Typical applications  
 Compressors  
 Lifts  
 Mixers  
 Pumps  
 Escalators  
 Agitators  
 Fans  
 Conveyor belts  
 Centrifuges  
 Hinged flaps  
 Bucket-elevators  
 Air conditioning system  
 General drives in manufacturing and processing machines

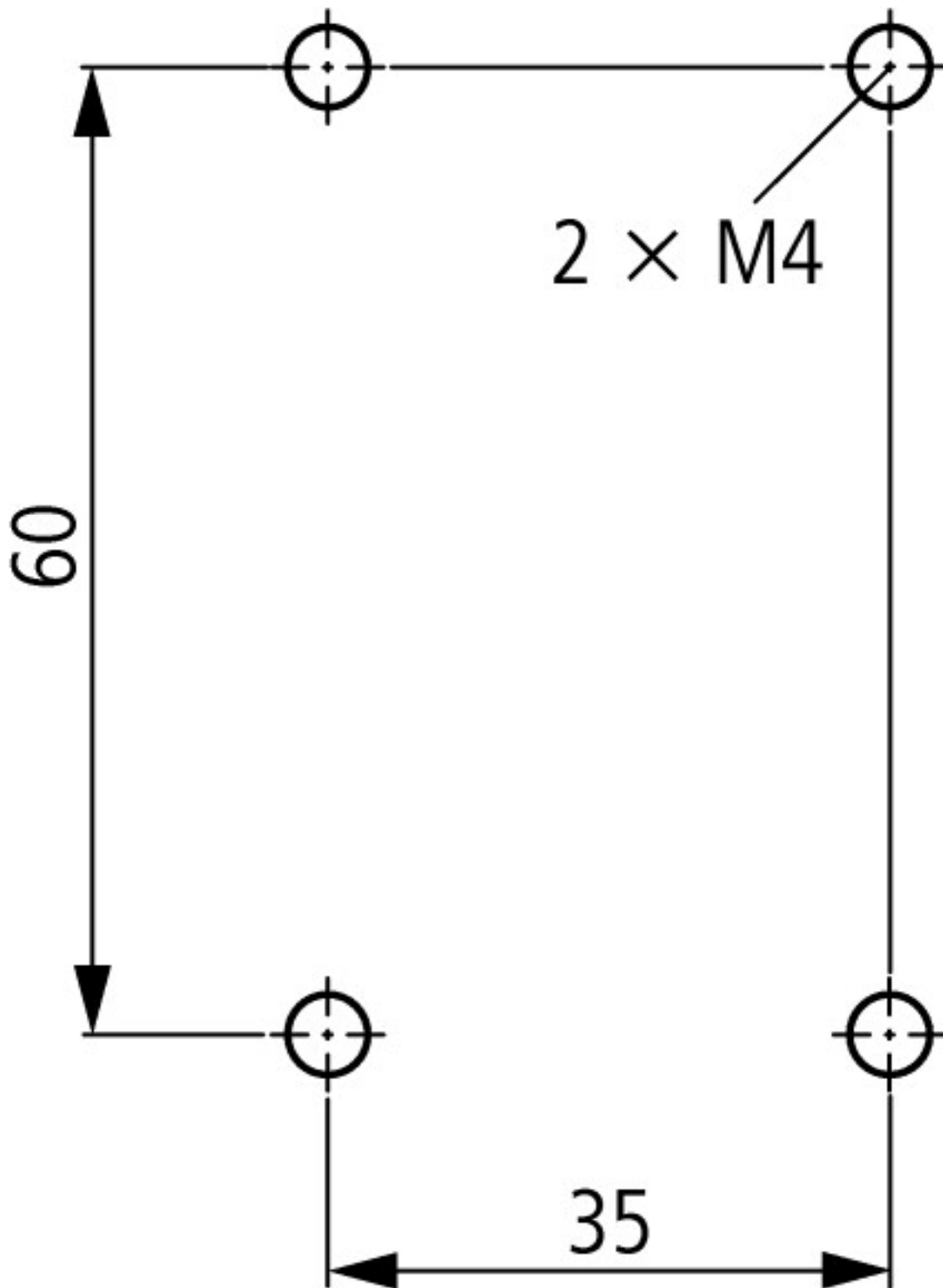


Extreme switching duty  
Squirrel-cage motor  
Operating characteristics  
Inching, plugging, reversing  
Electrical characteristics  
Make: up to 6 x rated motor current  
Break: up to 6 x rated motor current  
Utilization category  
100 % AC-4  
Typical applications  
Printing presses  
Wire-drawing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

## Dimensions



Contactor with auxiliary contact module



DILM7...DILM15  
DILA...  
Contactor with auxiliary contact module

## Additional product information (links)

### IL03407013Z (AWA2100-2126) Contactors

|                                                                                              |                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IL03407013Z (AWA2100-2126) Contactors                                                        | <a href="ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407013Z2012_03.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407013Z2012_03.pdf</a> |
| UL/CSA: Approved rating data                                                                 | <a href="http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&amp;startpage=5.84">http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&amp;startpage=5.84</a>             |
| UL/CSA: UL/CSA: Special Purpose Rating                                                       | <a href="http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&amp;startpage=5.85">http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&amp;startpage=5.85</a>             |
| UL/CSA: UL/CSA: Short Circuit Current Rating (SCCR)                                          | <a href="http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&amp;startpage=5.86">http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&amp;startpage=5.86</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>                                     |

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| 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> |