



**Contactor, 3p+1N/C, 11kW/400V/AC3**

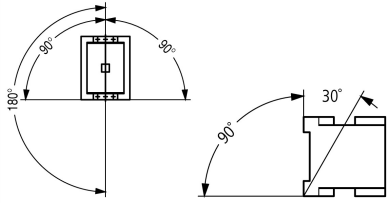
**Part no. DILM25-01(RDC240)**  
**Article no. 277181**  
**Catalog No. XTCE025C01BD**

## 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 |
|   |                |    |  |  |
| 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   |
| <b>Rated operational current</b>                          |                |    |  |  |
| AC-3  |                |    |  |  |
| 380 V 400 V   | $I_e$          | A  |  | 25   |
| AC-1  |                |    |  |  |
| Conventional free air thermal current, 3 pole, 50 - 60 Hz |                |    |  |  |
| Open  |                |    |  |  |
| at 40 °C  | $I_{th} = I_e$ | A  |  | 45   |
| enclosed  | $I_{th}$       | A  |  | 36   |
| Conventional free air thermal current, 1 pole             |                |    |  |  |
| open  | $I_{th}$       | A  |  | 100  |
| enclosed  | $I_{th}$       | A  |  | 90   |
| <b>Max. rating for three-phase motors, 50 - 60 Hz</b>     |                |    |  |  |
| AC-3  |                |    |  |  |
| 220 V 230 V   | P              | kW |  | 7.5  |
| 380 V 400 V   | P              | kW |  | 11   |
| 660 V 690 V   | P              | kW |  | 14   |
| AC-4  |                |    |  |  |
| 220 V 230 V   | P              | kW |  | 3.5  |
| 380 V 400 V   | P              | kW |  | 6  |
| 660 V 690 V   | P              | kW |  | 8.5  |
| <b>Contacts</b>   |                |    |  |  |
| N/C = Normally closed                                     |                |    |  | 1 NC   |
| Contact sequence  |                |    |  |  |
| Instructions  |                |    |  | Contacts to EN 50012.<br>integrated suppressor circuit in actuating electronics  |
| Can be combined with auxiliary contact                    |                |    |  | DILA-XHI(V)..  |
| Voltage AC/DC   |                |    |  | DC operation   |

## Technical data

|                      |  |  |  |                                 |
|----------------------|--|--|--|---------------------------------|
| <b>General</b>       |  |  |  |                                 |
| Standards            |  |  |  | IEC/EN 60947, VDE 0660, UL, CSA |
| Lifespan, mechanical |  |  |  |                                 |

|  |                 |                   |                                      |
|--|-----------------|-------------------|--------------------------------------|
| AC operated  | Operations      | x 10 <sup>6</sup> | 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  |                 |                   |                                      |
| Damp heat, constant, to IEC 60068-2-78<br>Damp heat, cyclic, to IEC 60068-2-30     |                 |                   |                                      |
| 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               |                   | 6.9                                  |
| Auxiliary contacts   |                 |                   |                                      |
| N/O contact  | g               |                   | 5.3                                  |
| N/C contact  | g               |                   | 3.5                                  |
| Degree of Protection   |                 |                   |                                      |
|  |                 |                   | IP00                                 |
| Protection against direct contact when actuated from front (EN 50274)              |                 |                   |                                      |
|  |                 |                   | Finger and back-of-hand proof        |
| Weight   |                 |                   |                                      |
| AC operated  | kg              |                   | 0.42                                 |
| DC operated  | kg              |                   | 0.48                                 |
| Terminal capacity main cable   |                 |                   |                                      |
| Solid  |                 |                   |                                      |
|  | mm <sup>2</sup> |                   | 1 x (0.75 - 16)<br>2 x (0.75 - 10)   |
| Flexible with ferrule  |                 |                   |                                      |
|  | mm <sup>2</sup> |                   | 1 x (0.75 - 16)<br>2 x (0.75 - 10)   |
| Stranded   |                 |                   |                                      |
|  | mm <sup>2</sup> |                   | 1 x 16                               |
| Solid or stranded  |                 |                   |                                      |
|  | AWG             |                   | 18 - 6                               |
| Main cable connection screw/bolt   |                 |                   |                                      |
|  |                 |                   | M5                                   |
| Tightening torque  |                 |                   |                                      |
|  | Nm              |                   | 3.2                                  |
| Terminal capacity control circuit cables   |                 |                   |                                      |
| Solid  |                 |                   |                                      |
|  | mm <sup>2</sup> |                   | 1 x (0.75 - 4)<br>2 x (0.75 - 4)     |
| 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                            |

|                        |  |      |                    |
|------------------------|--|------|--------------------|
| Control circuit cables |  |      | 1 x 6              |
| 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 | 440   |
| between the contacts                   |                | V AC | 440   |
| Making capacity (p.f. to IEC/EN 60947) |                |      |       |
|  | $U_p$ to 690 V | A    | 350   |
| Breaking capacity                      |                |      |       |
| 220 V 230 V                            |                | A    | 250   |
| 380 V 400 V                            |                | A    | 250   |
| 500 V                                  |                | A    | 250   |
| 660 V 690 V                            |                | A    | 150   |
| Short-circuit rating                   |                |      |       |
| Short-circuit protection maximum fuse  |                |      |       |
| Type "2" coordination                  |                |      |       |
| 400 V                                  | gG/gL 500 V    | A    | 35    |
| 690 V                                  | gG/gL 690 V    | A    | 35    |
| Type "1" coordination                  |                |      |       |
| 400 V                                  | gG/gL 500 V    | A    | 100   |
| 690 V                                  | gG/gL 690 V    | A    | 50    |

### AC

|   |                |     |     |
|---|----------------|-----|-----|
| AC-1  |                |     |     |
| Rated operational current                                 |                |     |     |
| Conventional free air thermal current, 3 pole, 50 - 60 Hz |                |     |     |
| Open  |                |     |     |
| at 40 °C  | $I_{th} = I_e$ | A   | 45  |
| at 50 °C  | $I_{th} = I_e$ | A   | 43  |
| at 55 °C  | $I_{th} = I_e$ | A   | 42  |
| at 60 °C  | $I_{th} = I_e$ | A   | 40  |
| enclosed  | $I_{th}$       | A   | 36  |
| Conventional free air thermal current, 1 pole             |                |     |     |
| open  | $I_{th}$       | A   | 100 |
| enclosed  | $I_{th}$       | A   | 90  |
| AC-3  |                |     |     |
| Rated operational current                                 |                |     |     |
| Open, 3-pole: 50 – 60 Hz                                  |                |     |     |
| 220 V 230 V   | $I_e$          | A   | 25  |
| 240 V   | $I_e$          | A   | 25  |
| 380 V 400 V   | $I_e$          | A   | 25  |
| 415 V   | $I_e$          | A   | 25  |
| 440V  | $I_e$          | A   | 25  |
| 500 V   | $I_e$          | A   | 25  |
| 660 V 690 V   | $I_e$          | A   | 15  |
| 380 V 400 V   | $I_e$          | A   | 25  |
| Motor rating  | P              | kWh |     |
| 220 V 230 V   | P              | kW  | 7.5 |
| 240V  | P              | kW  | 8.5 |

|                          |                |     |      |
|--------------------------|----------------|-----|------|
| 380 V 400 V              | P              | kW  | 11   |
| 415 V                    | P              | kW  | 14.5 |
| 440 V                    | P              | kW  | 15.5 |
| 500 V                    | P              | kW  | 17.5 |
| 660 V 690 V              | P              | kW  | 14   |
| <b>AC-4</b>              |                |     |      |
| Open, 3-pole: 50 – 60 Hz |                |     |      |
| 220 V 230 V              | I <sub>e</sub> | A   | 13   |
| 240 V                    | I <sub>e</sub> | A   | 13   |
| 380 V 400 V              | I <sub>e</sub> | A   | 13   |
| 415 V                    | I <sub>e</sub> | A   | 13   |
| 440 V                    | I <sub>e</sub> | A   | 13   |
| 500 V                    | I <sub>e</sub> | A   | 13   |
| 660 V 690 V              | I <sub>e</sub> | A   | 10   |
| <b>Motor rating</b>      |                |     |      |
| 220 V 230 V              | P              | kWh |      |
|                          | P              | kW  | 3.5  |
| 240 V                    | P              | kW  | 4    |
| 380 V 400 V              | P              | kW  | 6    |
| 415 V                    | P              | kW  | 6.5  |
| 440 V                    | P              | kW  | 7    |
| 500 V                    | P              | kW  | 8    |
| 660 V 690 V              | P              | kW  | 8.5  |

## DC

|  |                |   |     |
|--|----------------|---|-----|
| <b>Rated operational current, open</b> |                |   |     |
| <b>DC-1</b>                            |                |   |     |
| 60 V                                   | I <sub>e</sub> | A | 40  |
| 110 V                                  | I <sub>e</sub> | A | 40  |
| 220 V                                  | I <sub>e</sub> | A | 40  |
| 440 V                                  | I <sub>e</sub> | A | 2.9 |
| <b>DC-3</b>                            |                |   |     |
| 60 V                                   | I <sub>e</sub> | A | 35  |
| 110 V                                  | I <sub>e</sub> | A | 35  |
| 220 V                                  | I <sub>e</sub> | A | 10  |
| 440 V                                  | I <sub>e</sub> | A | 0.6 |
| <b>DC-5</b>                            |                |   |     |
| 60 V                                   | I <sub>e</sub> | A | 35  |
| 110 V                                  | I <sub>e</sub> | A | 35  |
| 220 V                                  | I <sub>e</sub> | A | 10  |
| 440 V                                  | I <sub>e</sub> | A | 0.6 |

## Current heat loss

|   |  |    |      |
|---|--|----|------|
| 3-pole at I <sub>th</sub>                         |  | W  | 11.4 |
| Current heat loss at I <sub>e</sub> to AC-3/400 V |  | W  | 4.2  |
| Impedance per pole                                |  | mΩ | 2.7  |

## 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> | 0.7 - 1.2  |
| Notes  |          |                  | RDC 240 (U <sub>min</sub> 200 V DC/U <sub>max</sub> 240 V DC)<br>Example: U <sub>c</sub> = 0.7 x U <sub>min</sub> - 1.2 x U <sub>max</sub> / U <sub>c</sub> = 0.7 x 200 V - 1.2 x 240 V DC |
| 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  |
| <b>Power consumption of the coil in a cold state and 1.0 x U<sub>c</sub></b> |          |                  |  |
| 50 Hz  | Pick-up  | VA               | 52   |

|  |         |                   |   |
|--|---------|-------------------|---|
| 50 Hz  | Sealing | VA                | 7.1   |
| 50 Hz  | Sealing | W                 | 2.1   |
| 60 Hz  | Pick-up | VA                | 67  |
| 60 Hz  | Sealing | VA                | 8.7   |
| 60 Hz  | Sealing | W                 | 2.6   |
| 50/60 Hz   | Pick-up | VA                | 62<br>58  |
| 50/60 Hz   | Sealing | VA                | 9.1<br>6.5  |
| 50/60 Hz   | Sealing | W                 | 2.5<br>2  |
| DC operated  | Pick-up | W                 | 12  |
| DC operated  | Sealing | W                 | 0.5   |
| Duty factor  |         | % DF              | 100   |
| Switching times at 100 % U <sub>c</sub> (approximate values) |         |                   |   |
| Main contacts  |         |                   |   |
| AC operated  |         |                   |   |
| Closing delay  |         | ms                | 16 - 22   |
| Opening delay  |         | ms                | 8 - 14  |
| DC operated  |         |                   |   |
| Closing delay  |         | ms                | 47  |
| Opening delay  |         | ms                | 30  |
| 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  | 25   |
| Heat dissipation per pole, current-dependent   | P <sub>vid</sub>  | W  | 1.4  |
| Equipment heat dissipation, current-dependent  | P <sub>vid</sub>  | W  | 4.2  |
| Static heat dissipation, non-current-dependent   | P <sub>vs</sub>   | W  | 0.9  |
| 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  |                   |    |  |
| 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

|  |    |                  |
|--|----|------------------|
| Low-voltage industrial components (EG000017) / Power contactor, AC switching (EC000066)  |    |                  |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, AC switching (ecl@ss8.1-27-37-10-03 [AAB718012]) |    |                  |
| Rated control supply voltage Us at AC 50HZ   | V  | 0 - 0            |
| Rated control supply voltage Us at AC 60HZ   | V  | 0 - 0            |
| Rated control supply voltage Us at DC  | V  | 200 - 240        |
| Voltage type for actuating   |    | DC               |
| Rated operation current Ie at AC-1, 400 V  | A  | 45               |
| Rated operation current Ie at AC-3, 400 V  | A  | 25               |
| Rated operation power at AC-3, 400 V   | kW | 11               |
| Rated operation current Ie at AC-4, 400 V  | A  | 13               |
| Rated operation power Ie at AC-4, 400 V  | kW | 6                |
| Modular version  |    | No               |
| Number of auxiliary contacts as normally open contact  |    | 0                |
| Number of auxiliary contacts as normally closed contact  |    | 1                |
| 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  |

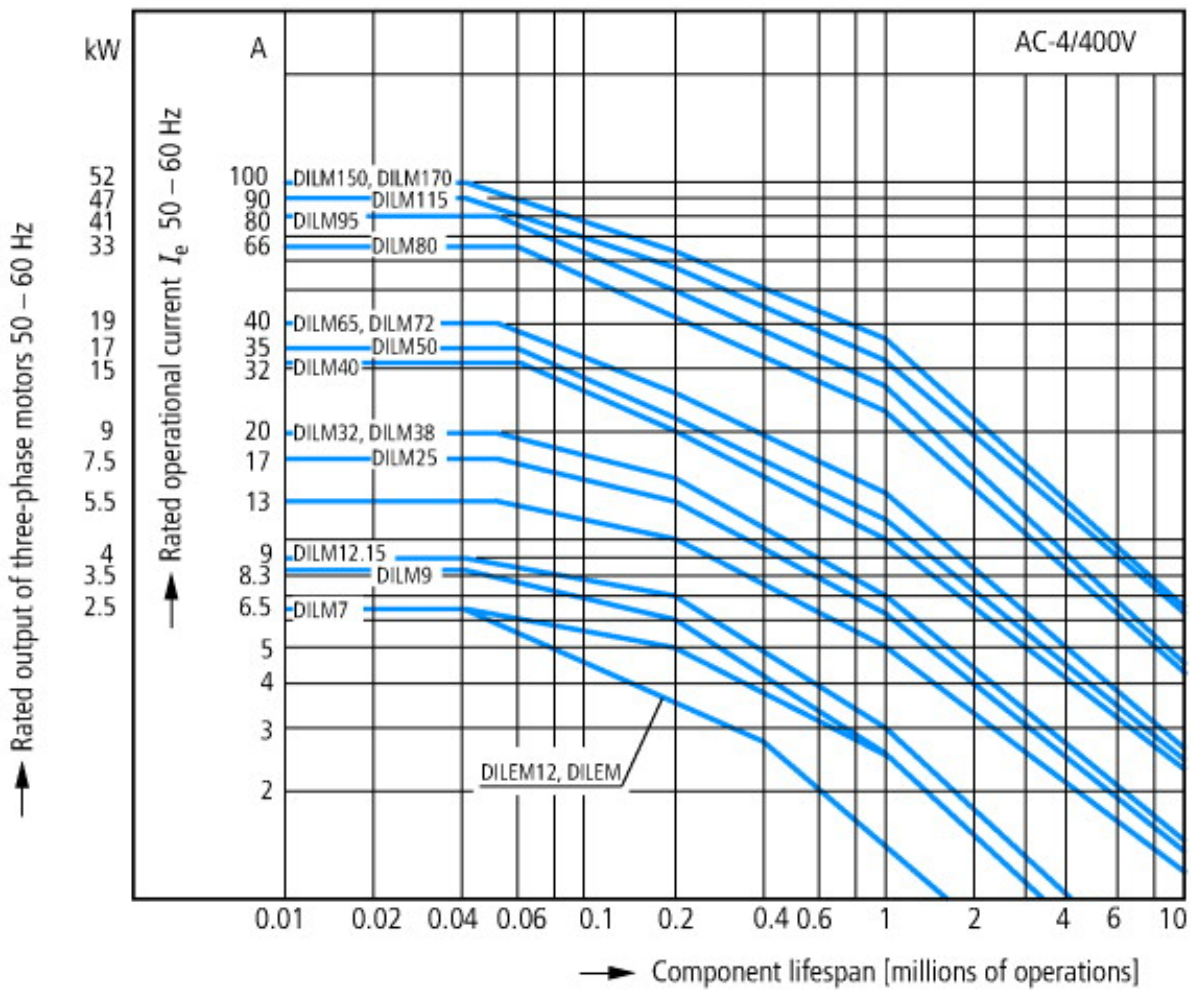


- 1: Overload relay
- 2: Suppressor
- 3: Auxiliary contact modules



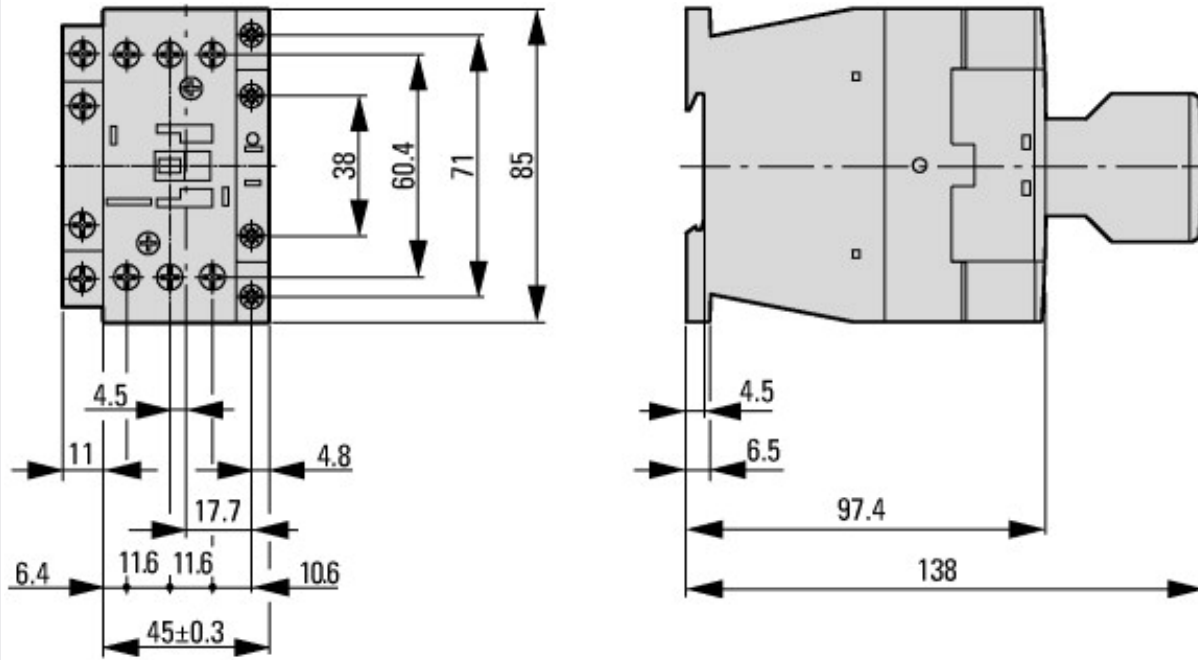
- Squirrel-cage motor
- Operating characteristics
- Starting: from rest
- Stopping: after attaining full running speed
- Electrical characteristics
- Make: up to 6 x rated motor current
- Break: up to 1 x rated motor current
- Utilization category
- 100 % AC-3
- Typical applications
- Compressors
- Lifts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



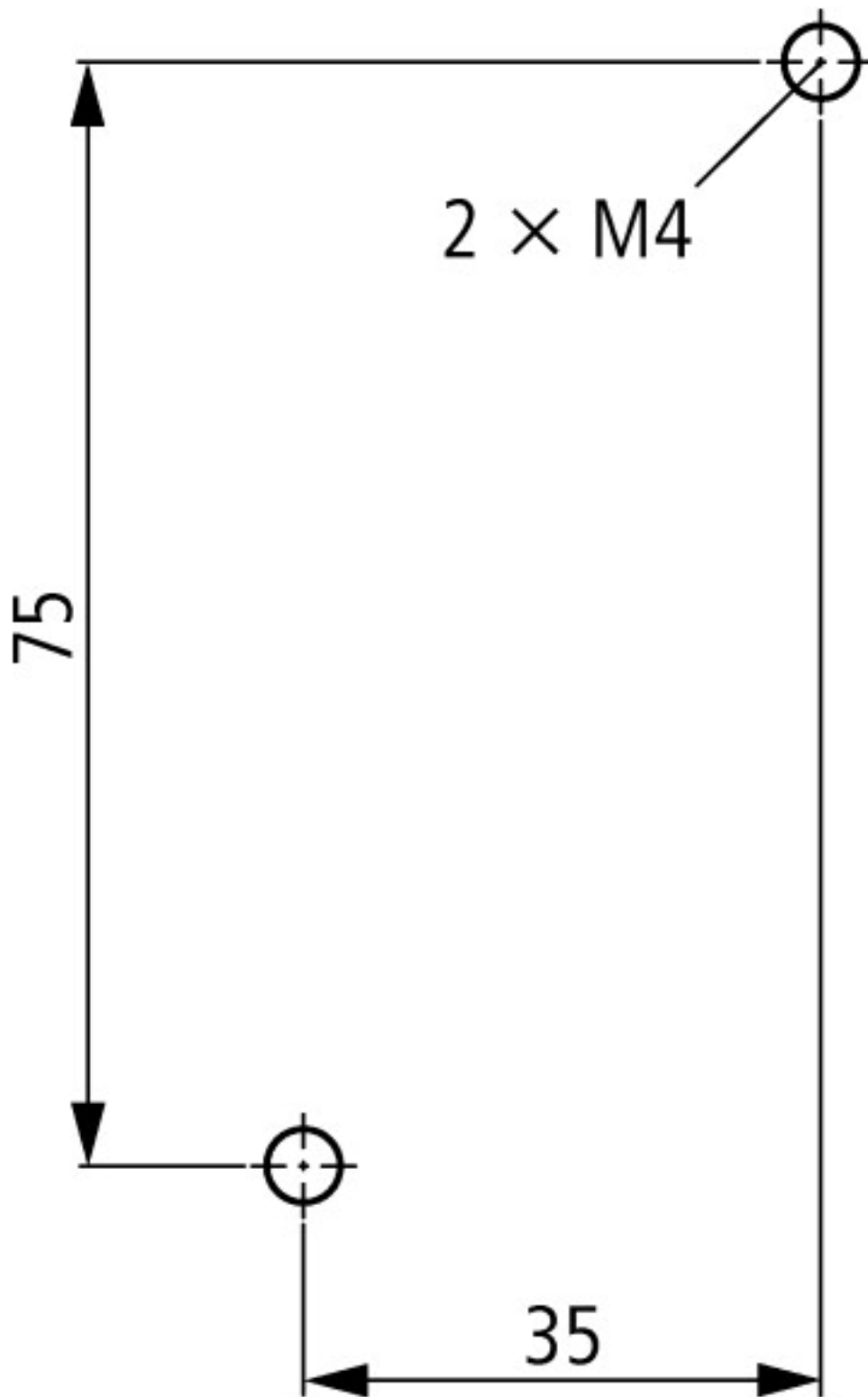


- Extreme switching duty
- Squirrel-cage motor
- Operating characteristics
- Inching, plugging, reversing
- Electrical characteristics
- Make: up to 6 x rated motor current
- Break: up to 6 x rated motor current
- Utilization category
- 100 % AC-4
- Typical applications
- Printing presses
- Wire-drawing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

## Dimensions



Contacteur with auxiliary contact module



Lateral clearance to earthed parts: 6 mm

### Additional product information (links)

#### IL03407014Z (AWA2100-2127) Contactor

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

UL/CSA: Approved rating data <http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&startpage=5.84>

UL/CSA: UL/CSA: Special Purpose Rating <http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&startpage=5.85>

UL/CSA: UL/CSA: Short Circuit Current Rating (SCCR) <http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&startpage=5.86>

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

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

Mirror Contacts for Highly-Reliable Information Relating to Safety-Related Control Functions [http://www.moeller.net/binary/ver\\_techpapers/ver944en.pdf](http://www.moeller.net/binary/ver_techpapers/ver944en.pdf)

|  |   |
|--|---|
| Effect of the 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> |
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