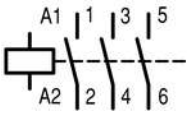
# DATASHEET - DILL18(230V50HZ,240V60HZ)



**Lamp load contactor, 230 V 50 Hz, 240 V 60 Hz, 220 V 230 V: 18 A, Contactors for lighting systems**

| | |
|---|---|
| **Part no.** | **DILL18(230V50HZ,240V60HZ)** |
| **Catalog No.** | **104405** |
| **Alternate Catalog No.** | **XTCT018C00F** |
| **EL-Nummer (Norway)** | **4134239** |

## Delivery program

| | | | |
|---|---|---|---|
| Product range | | | DILL Lighting contactors |
| Application | | | Contactors for lighting systems |
| Utilization category | | | AC-1: Non-inductive or slightly inductive loads, resistance furnaces |
| **Rated operational current** | | | |
| AC-5a | | | |
| 220 V 230 V | $I_e$ | A | 18 |
| 380 V 400 V | $I_e$ | A | 18 |
| AC-5b | | | |
| 220 V 230 V | $I_e$ | A | 21 |
| 380 V 400 V | $I_e$ | A | 21 |
| AC-1 | | | |
| Conventional free air thermal current, 3 pole, 50 - 60 Hz | | | |
| Open | | | |
| at 40 °C | $I_{th} = I_e$ | A | 40 |
| Contact sequence | | |   |
| Actuating voltage | | | 230 V 50 Hz, 240 V 60 Hz |
| Note | | | Switchgear for lighting systems |

| | | DILL | L12 | L18 | L20 | M7 | M9 | M12 | M17 | M25 | M32 | M40 | M50 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Permissible compensation capacitance | Cmax | [µF] | 470 | 470 | 470 | 47 | 80 | 100 | 220 | 330 | 470 | 470 | 500 |
| Filament lamp | Ie | [A] | 14 | 21 | 27 | 6 | 7.5 | 10 | 14 | 21 | 27 | 33 | 42 |
| Mercury blended lamps | Ie | [A] | 12 | 16 | 23 | 5 | 6.5 | 8.5 | 12 | 16 | 23 | 30 | 38 |
| Fluorescent lamps, conventional - reactor – starter – connection | Ie | [A] | 20 | 26 | 35 | 9 | 10 | 15 | 20 | 26 | 35 | 41 | 45 |
| Fluorescent lamps, conventional - reactor – starter – connection | Ie | [A] | 20 | 26 | 35 | 5.5 | 8 | 13 | 15 | 22.5 | 29 | 36 | 47 |
| Fluorescent lamps, duo circuit (series compensated) | Ie | [A] | 12 | 18 | 20 | 5 | 6.5 | 8.5 | 12 | 17.5 | 22.5 | 28 | 35 |
| electronic upstream devices and | Ie | [A] | 12 | 18 | 20 | 3.5 | 6 | 10 | 12 | 17.5 | 20 | 25 | 30 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Switchgear for lighting systems LED lamps | | | | | | | | | | | | |
| High-pressure mercury-arc lamps | Ie [A] | 12 | 18 | 20 | 3.5 | 6 | 10 | 12 | 17.5 | 20 | 25 | 30 |
| Metal-halide lamps | Ie [A] | 12 | 18 | 20 | 3.5 | 6 | 10 | 12 | 17.5 | 20 | 25 | 30 |
| Low-pressure sodium lamps | Ie [A] | 7.5 | 10 | 12 | 3 | 4 | 6 | 7.5 | 10 | 12 | 15 | 22 |

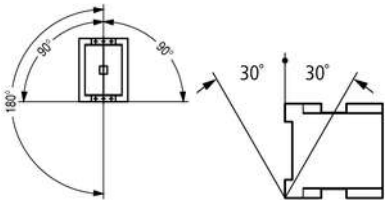
| | | DIL | M65 | M80 | M95 | M115 | M150 | M185A | M225A | M250A | M300A | M400A | M500A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Permissible compensation capacitance | Cmax [mF] | 500 | 550 | 620 | 830 | 970 | 2055 | 2300 | 2600 | 3000 | 3250 | 3500 | |
| Filament lamp | Ie [A] | 55 | 67 | 79 | 95 | 125 | 153 | 187 | 208 | 349 | 332 | 415 | |
| Mercury blended lamps | Ie [A] | 45 | 65 | 67 | 80 | 110 | 123 | 150 | 167 | 200 | 266 | 332 | |
| Fluorescent lamps, conventional - reactor – starter – connection | Ie [A] | 55 | 95 | 100 | 125 | 145 | 207 | 237 | 263 | 300 | 375 | 525 | |
| Fluorescent lamps, conventional - reactor – starter – connection | Ie [A] | 59 | 71 | 95 | 100 | 138 | 186 | 213 | 236 | 270 | 338 | 473 | |
| Fluorescent lamps, duo circuit (series compensated) | Ie [A] | 45.5 | 56 | 66.5 | 80.5 | 105 | 130 | 158 | 175 | 210 | 280 | 350 | |
| electronic upstream devices and LED lamps | Ie [A] | 36 | 55 | 60 | 80 | 95 | 138 | 158 | 175 | 200 | 250 | 350 | |
| High-pressure mercury-arc lamps | Ie [A] | 36 | 55 | 60 | 80 | 95 | 138 | 158 | 175 | 200 | 250 | 350 | |
| Metal-halide lamps | Ie [A] | 36 | 55 | 60 | 80 | 95 | 138 | 158 | 175 | 200 | 250 | 350 | |
| Low-pressure sodium lamps | Ie [A] | 25 | 35 | 40 | 50 | 70 | 100 | 11 | 123 | 140 | 175 | 245 | |

In compensated lamps, the sum of the capacitances must not exceed the contactors' max. permissible capacitor load (Cmax)!
The values in the table are for each contact in the contactors.

# Technical data

## General

| | | | |
|---|---|---|---|
| Standards | | | IEC/EN 60947, VDE 0660, UL, CSA |
| Lifespan, mechanical | | | |
| AC operated | Operations | x $10^6$ | 1 |
| Operating frequency, mechanical | | | |
| AC operated | Operations/h | | 60 |
| 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 | | | |
| Mechanical shock resistance | | g | 6.9 |
| Degree of Protection | | | IP00 |
| Altitude | | m | Max. 2000 |
| Weight | | | |
| AC operated | | kg | 0.42 |

## 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 |
| Making capacity | | A | 350 |
| Breaking capacity | 380 … 400 V | A | 250 |
| Lifespan, electrical | Operations | | 10000 |
| Short-circuit protection maximum fuse | | | |
| 400 V | gG/gL 500 V | A | 100 |

## 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 | 40 |
| at 60 °C | $I_{th} = I_e$ | A | 35 |
| AC-5a operation | | | |
| 220 V 230 V | $I_e$ | A | 18 |
| 380 V 400 V | $I_e$ | A | 18 |
| AC-5b operation | | | |
| 220 V 230 V | $I_e$ | A | 21 |
| 380 V 400 V | $I_e$ | A | 21 |
| 380 V 400 V | $I_e$ | A | 21 |
| Electric lamps | | | |
| Filament bulbs | | A | 21 |
| Mercury blended lamps | | A | 16 |
| Fluorescent lamp load | | | |
| Conventional reactor starter circuit | | A | 26 |
| Duo circuit | | A | 26 |
| Electronic upstream devices | | A | 18 |
| High-pressure mercury vapour lamps | | A | 18 |
| Metal-halide lamps | | A | 18 |
| High-pressure sodium lamps | | A | 18 |
| Low-pressure sodium lamps | | A | 10 |
| Maximum permissible compensation capacitance | | µF | 470 |

## Current heat loss

| | | | |
|---|---|---|---|
| Current heat loss at $I_e$ to AC-5b/400 V | | W | 3 |
| Impedance per pole | | mΩ | 2.65 |

## Magnet systems

| | | | |
|---|---|---|---|
| Voltage tolerance | | | |

| | | | |
|---|---|---|---|
| AC operated | Pick-up | x $U_c$ | |
| Min. pick-up voltage, AC operated | | x $U_c$ | 0.12 |
| Pick-up voltage AC operated, max. | | x $U_c$ | 1.5 |
| Drop-out voltage AC operated | Drop-out | x $U_c$ | |
| Drop-out voltage, AC-operated, min. | | x $U_c$ | 0.3 |
| Power consumption of the coil in a cold state and 1.0 x $U_S$ | | | |
| Dual-voltage coil 50 Hz | Pick-up | VA | 52 |
| Dual-voltage coil 50 Hz | Sealing | VA | 7.1 |
| Dual-voltage coil 50 Hz | Sealing | W | 2.1 |
| Dual-voltage coil 60 Hz | Pick-up | VA | 67 |
| Dual-voltage coil 60 Hz | Sealing | VA | 8.7 |
| Dual-voltage coil 60 Hz | Sealing | W | 2.1 |
| Duty factor | | % DF | 100 |
| Operating times | | | |
| Closing delay | | ms | |
| Switching times of main contacts AC operated Closing delay, min. | | ms | 16 |
| Switching times of main contacts AC operated Closing delay, max. | | ms | 22 |
| Opening delay | | ms | |
| Switching times of main contacts AC operated Opening delay, min. | | ms | 8 |
| Switching times of main contacts AC operated Opening delay, max. | | ms | 14 |

### Additional technical data

| | | | |
|---|---|---|---|
| like the contactar | DIL | | M25 |

### Rating data for approved types

| | | | |
|---|---|---|---|
| Switching capacity | | | |
| General use | | A | 35 |
| Short Circuit Current Rating | | SCCR | |
| Basic Rating | | | |
| SCCR | | kA | 5 |
| max. Fuse | | A | 125 |
| max. CB | | A | 125 |
| 480 V High Fault | | | |
| SCCR (fuse) | | kA | 100 |
| max. Fuse | | A | 100 Class J |
| SCCR (CB) | | kA | 22 |
| max. CB | | A | 32 |
| 600 V High Fault | | | |
| SCCR (fuse) | | kA | 100 |
| max. Fuse | | A | 100 Class J |
| SCCR (CB) | | kA | 22 |
| max. CB | | A | 32 |
| Special Purpose Ratings | | | |
| Incandescent Lamps (Tungsten) | | | |
| 480V 60Hz 3phase, 277V 60Hz 1phase | | A | 35 |
| 600V 60Hz 3phase, 347V 60Hz 1phase | | A | 35 |

### Electromagnetic compatibility (EMC)

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

## Design verification as per IEC/EN 61439

| | | | |
|---|---|---|---|
| Technical data for design verification | | | |
| Rated operational current for specified heat dissipation | $I_n$ | A | 21 |
| Heat dissipation per pole, current-dependent | $P_{vid}$ | W | 1 |
| Equipment heat dissipation, current-dependent | $P_{vid}$ | W | 3 |
| Static heat dissipation, non-current-dependent | $P_{vs}$ | W | 2.1 |
| Heat dissipation capacity | $P_{diss}$ | W | 0 |

| | | |
|---|---|---|
| Operating ambient temperature min. | °C | -25 |
| Operating ambient temperature max. | °C | 60 |
| IEC/EN 61439 design verification | | |
| 10.2 Strength of materials and parts | | |
| 10.2.2 Corrosion resistance | | Meets the product standard's requirements. |
| 10.2.3.1 Verification of thermal stability of enclosures | | Meets the product standard's requirements. |
| 10.2.3.2 Verification of resistance of insulating materials to normal heat | | Meets the product standard's requirements. |
| 10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects | | Meets the product standard's requirements. |
| 10.2.4 Resistance to ultra-violet (UV) radiation | | Meets the product standard's requirements. |
| 10.2.5 Lifting | | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.2.6 Mechanical impact | | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.2.7 Inscriptions | | Meets the product standard's requirements. |
| 10.3 Degree of protection of ASSEMBLIES | | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.4 Clearances and creepage distances | | Meets the product standard's requirements. |
| 10.5 Protection against electric shock | | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.6 Incorporation of switching devices and components | | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.7 Internal electrical circuits and connections | | Is the panel builder's responsibility. |
| 10.8 Connections for external conductors | | Is the panel builder's responsibility. |
| 10.9 Insulation properties | | |
| 10.9.2 Power-frequency electric strength | | Is the panel builder's responsibility. |
| 10.9.3 Impulse withstand voltage | | Is the panel builder's responsibility. |
| 10.9.4 Testing of enclosures made of insulating material | | Is the panel builder's responsibility. |
| 10.10 Temperature rise | | The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices. |
| 10.11 Short-circuit rating | | Is the panel builder's responsibility. The specifications for the switchgear must be observed. |
| 10.12 Electromagnetic compatibility | | Is the panel builder's responsibility. The specifications for the switchgear must be observed. |
| 10.13 Mechanical function | | The device meets the requirements, provided the information in the instruction leaflet (IL) is observed. |

## Technical data ETIM 8.0

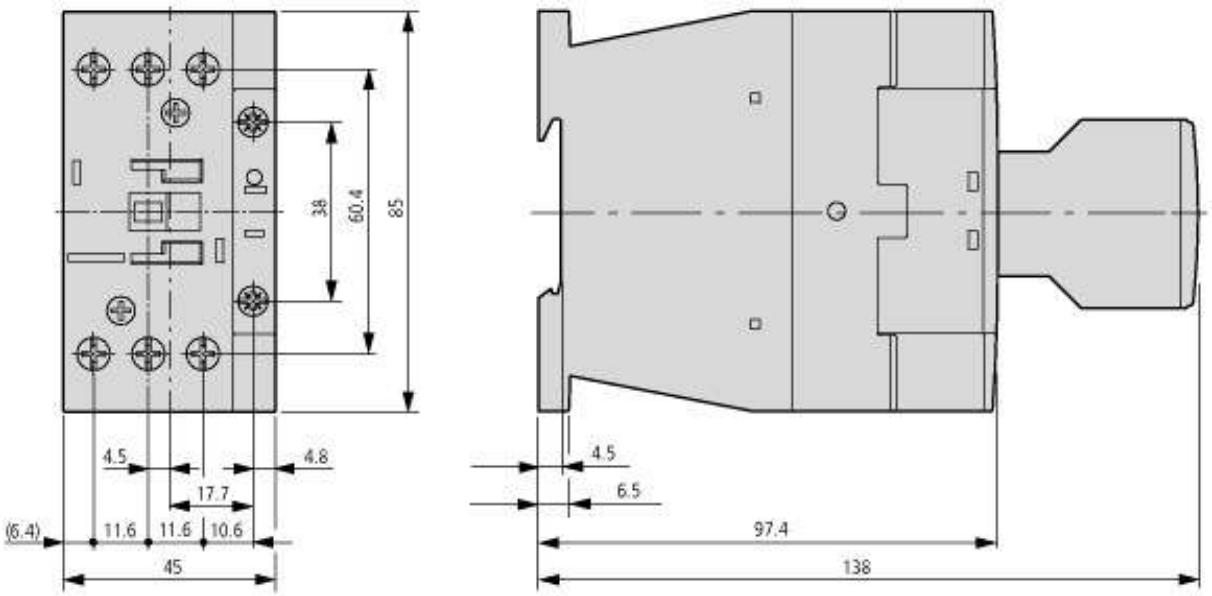
| | | |
|---|---|---|
| Low-voltage industrial components (EG000017) / Power contactor, AC switching (EC000066) | | |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, AC switching (ecl@ss10.0.1-27-37-10-03 [AAB718015]) | | |
| Rated control supply voltage Us at AC 50HZ | V | 230 - 230 |
| Rated control supply voltage Us at AC 60HZ | V | 240 - 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 | 18 |
| Rated operation current Ie at AC-3, 400 V | A | 0 |
| Rated operation power at AC-3, 400 V | kW | 0 |
| Rated operation current Ie at AC-4, 400 V | A | 0 |
| Rated operation power at AC-4, 400 V | kW | 0 |
| Rated operation power NEMA | kW | 0 |
| 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 normally open contacts as main contact | | 3 |

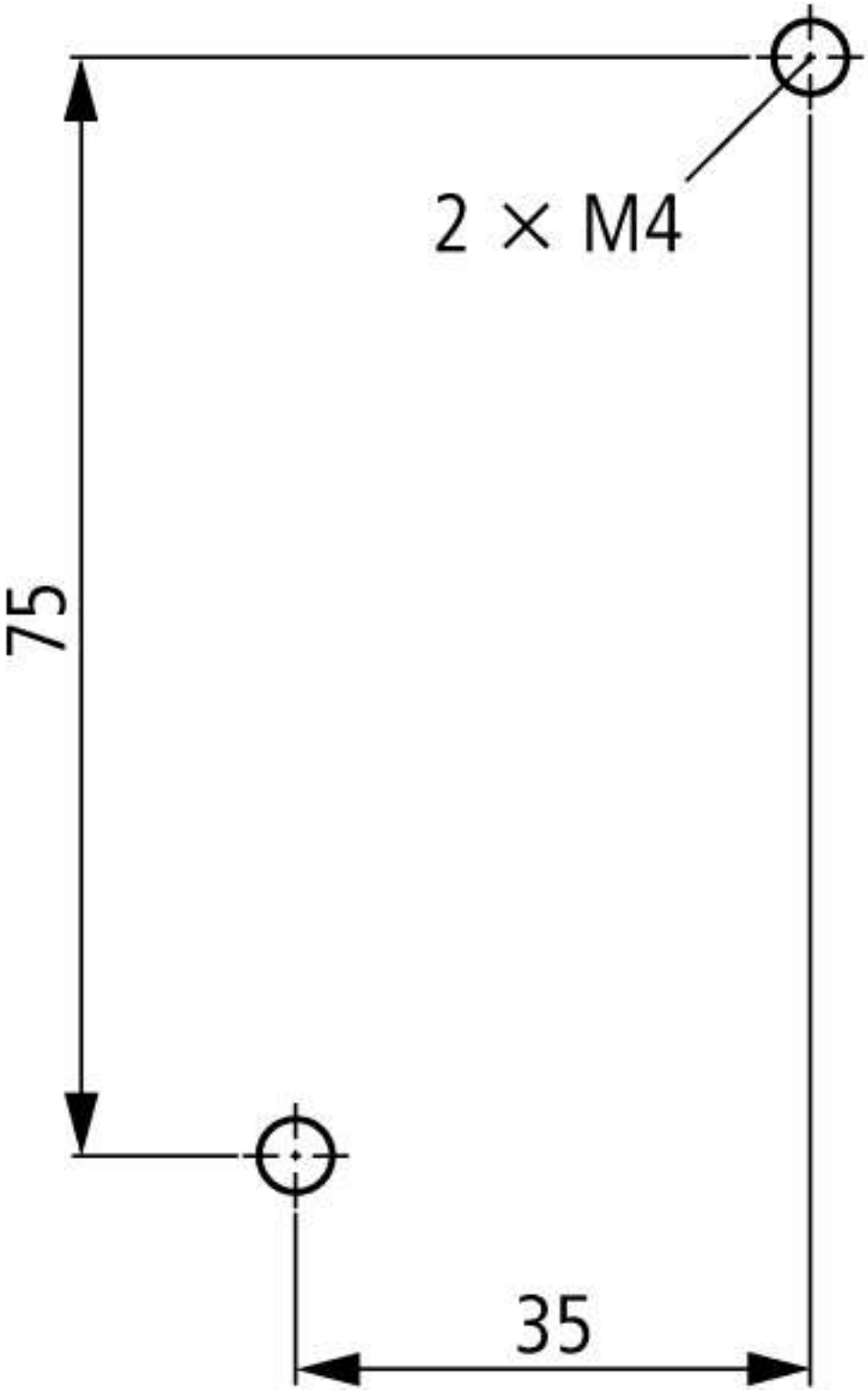
## Approvals

| | | |
|---|---|---|
| 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. | | 3211-04 |
| North America Certification | | UL listed, CSA certified |
| Specially designed for North America | | No |

## Dimensions






distance at side to earthed parts: 6 mm

## Additional product information (links)

| **IL03407047Z (AWA2100-2322) Lighting contactors** | |
|---|---|
| IL03407047Z (AWA2100-2322) Lighting contactors | https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407047Z2021_08.pdf |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