

DATASHEET - DILM38-11(RDC24)-PI

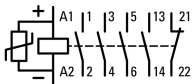


Contactor, 3 pole, 380 V 400 V 18.5 kW, 1 N/O, 1 NC, RDC 24: 24 - 27 V DC, DC operation, Push in terminals



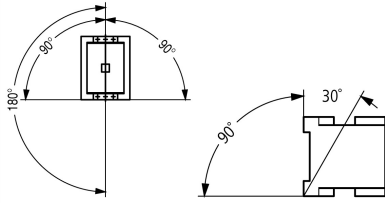
Part no. DILM38-11(RDC24)-PI
Catalog No. 199298
Alternate Catalog No. XTCEPI038C11TD

Delivery program

| | | | |
|---|----------------|----|--|
| 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 NAC-3: Normal AC induction motors: starting, switch off during running AC-4: Normal AC induction motors: starting, plugging, reversing, inching |
| Notes | | | Not suitable for motors with efficiency class IE3. |
| Connection technique | | | Push in terminals |
| Number of poles | | | 3 pole |
| Rated operational current | | | |
| AC-3 | | | |
| Notes | | | At maximum permissible ambient temperature (open.) |
| 380 V 400 V | I_e | A | 38 |
| 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 |
| Max. rating for three-phase motors, 50 - 60 Hz | | | |
| AC-3 | | | |
| 220 V 230 V | P | kW | 11 |
| 380 V 400 V | P | kW | 18.5 |
| 660 V 690 V | P | kW | 21 |
| AC-4 | | | |
| 220 V 230 V | P | kW | 4 |
| 380 V 400 V | P | kW | 7 |
| 660 V 690 V | P | kW | 10 |
| Contacts | | | |
| N/O = Normally open | | | 1 N/O |
| N/C = Normally closed | | | 1 NC |
| Contact sequence | | |  |
| Instructions | | | |
| Can be combined with auxiliary contact | | | DILM32-XHI...-PI DILA-XHI(V)...-PI |
| Actuating voltage | | | RDC 24: 24 - 27 V DC |
| Voltage AC/DC | | | DC operation |
| Connection to SmartWire-DT | | | yes in conjunction with DIL-SWD SmartWire DT contactor module |
| Frame size | | | 2 |

Technical data

General

| | | | |
|---|-----------------|--|--|
| Standards | | | IEC/EN 60947, VDE 0660, UL, CSA |
| Operating frequency, mechanical | | | |
| DC operated | Operations/h | | 5000 |
| Climatic proofing | | | Damp heat, constant, to IEC 60068-2-78 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 | | | IP20 |
| Protection against direct contact when actuated from front (EN 50274) | | | Finger and back-of-hand proof |
| Altitude | m | | Max. 2000 |
| Weight | | | |
| DC operated | kg | | 0.55 |
| Spring-loaded terminal connection | | | |
| Tool | | | |
| Standard screwdriver | | | 3.0 x 0.5 |
| Push-in terminals | | | |
| Terminal capacity main cable | | | |
| Solid | mm ² | | 1 x (1 - 6) 2 x (1 - 6) |
| flexible | mm ² | | 1 x (1 - 10) 2 x (1 - 6) |
| flexible with ferrules | mm ² | | 1 x (1 - 6) 2 x (1 - 4) |
| flexible with ultrasonic welded busbar end | mm ² | | 1 x (1 - 10) 2 x (1 - 6) |
| flexible with uninsulated wire end ferrule | mm ² | | 1 x (1 - 6) 2 x (1 - 6) |
| Solid or stranded | AWG | | 18 - 8 |
| Stripping length | mm | | 12 |
| Standard screwdriver | | | 3.0 x 0.5 |
| Terminal capacity control circuit cables | | | |
| Solid | mm ² | | 1 x (0,5 - 2,5) 2 x (0,5 - 2,5) |
| flexible | mm ² | | 1 x (0,5 - 2,5) 2 x (0,5 - 2,5) |

| | | | |
|--|--|-----------------|------------------------------------|
| flexible with ferrules | | mm ² | 1 x (0,5 - 1,5) 2 x (0,5 - 1,5) |
| flexible with ultrasonic welded busbar end | | mm ² | 1 x (0,5 - 2,5) 2 x (0,5 - 2,5) |
| flexible with uninsulated wire end ferrule | | mm ² | 1 x (0,5 - 2,5) 2 x (0,5 - 2,5) |
| Solid or stranded | | AWG | 20 - 14 |
| Stripping length | | mm | 10 |
| Tool | | | |
| Standard screwdriver | | mm | 3.0 x 0.5 |

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 | 384 |
| Breaking capacity | | | |
| 220 V 230 V | | A | 320 |
| 380 V 400 V | | A | 320 |
| 500 V | | A | 320 |
| 660 V 690 V | | A | 180 |
| Short-circuit rating | | | |
| Short-circuit protection maximum fuse | | | |
| Type "2" coordination | | | |
| 400 V | gG/gL 500 V | A | 50 |
| 690 V | gG/gL 690 V | A | 35 |
| Type "1" coordination | | | |
| 400 V | gG/gL 500 V | A | 125 |
| 690 V | gG/gL 690 V | A | 63 |

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 | | | |
| Notes | | | At maximum permissible ambient temperature (open.) |
| 220 V 230 V | I _e | A | 38 |
| 240 V | I _e | A | 38 |
| 380 V 400 V | I _e | A | 38 |
| 415 V | I _e | A | 38 |
| 440V | I _e | A | 38 |
| 500 V | I _e | A | 38 |

| | | | |
|--------------------------|----------------|-----|------|
| 660 V 690 V | I _e | A | 22.5 |
| Motor rating | P | kWh | |
| 220 V 230 V | P | kW | 11 |
| 240V | P | kW | 12 |
| 380 V 400 V | P | kW | 18.5 |
| 415 V | P | kW | 20 |
| 440 V | P | kW | 21 |
| 500 V | P | kW | 24 |
| 660 V 690 V | P | kW | 21 |
| AC-4 | | | |
| Open, 3-pole: 50 – 60 Hz | | | |
| 220 V 230 V | I _e | A | 15 |
| 240 V | I _e | A | 15 |
| 380 V 400 V | I _e | A | 15 |
| 415 V | I _e | A | 15 |
| 440 V | I _e | A | 15 |
| 500 V | I _e | A | 15 |
| 660 V 690 V | I _e | A | 12 |
| Motor rating | P | kWh | |
| 220 V 230 V | P | kW | 4 |
| 240 V | P | kW | 4.5 |
| 380 V 400 V | P | kW | 7 |
| 415 V | P | kW | 7.5 |
| 440 V | P | kW | 8 |
| 500 V | P | kW | 9 |
| 660 V 690 V | P | kW | 10 |

Current heat loss

| | | | |
|---|--|----|------|
| 3 pole, at I _{th} (60°) | | W | 10.3 |
| Current heat loss at I _e to AC-3/400 V | | W | 9.3 |
| Impedance per pole | | mΩ | 2.7 |

Magnet systems

| | | | |
|--|----------|------------------|---|
| Voltage tolerance | | | |
| DC operated | Pick-up | x U _c | 0.7 - 1.2 |
| Notes | | | RDC 24 (U _{min} 24 V DC/U _{max} 27 V DC) Example: U _S = 0.7 x U _{min} - 1.2 x U _{max} / U _S = 0.7 x 24V - 1.2 x 27V DC |
| DC operated | Drop-out | x U _c | 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 _S | | | |
| DC operated | Pick-up | W | 12 |
| DC operated | Sealing | W | 0,9 |
| Duty factor | | % DF | 100 |
| Changeover time at 100 % U _S (recommended value) | | | |
| Main contacts | | | |
| DC operated | | ms | |
| Closing delay | | ms | |
| Closing delay | | ms | 47 |
| Opening delay | | ms | |
| Opening delay | | ms | 30 |
| Arcing time | | ms | 10 |

Electromagnetic compatibility (EMC)

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

Rating data for approved types

| | | | |
|----------------------|--|--|--|
| Switching capacity | | | |
| Maximum motor rating | | | |

| | | | |
|------------------------------|--|------|-----|
| Three-phase | | | |
| 200 V 208 V | | HP | 10 |
| 230 V 240 V | | HP | 10 |
| 460 V 480 V | | HP | 20 |
| 575 V 600 V | | HP | 30 |
| Single-phase | | | |
| 115 V 120 V | | HP | 3 |
| 230 V 240 V | | HP | 5 |
| General use | | A | 40 |
| Auxiliary contacts | | | |
| General Use | | | |
| AC | | V | 600 |
| AC | | A | 10 |
| DC | | V | 250 |
| DC | | A | 1 |
| Short Circuit Current Rating | | SCCR | |
| Basic Rating | | | |
| SCCR | | kA | 5 |
| max. Fuse | | A | 125 |
| max. CB | | A | 125 |

Design verification as per IEC/EN 61439

| | | | |
|--|--|----|-----|
| Technical data for design verification | | | |
| Operating ambient temperature min. | | °C | -25 |
| Operating ambient temperature max. | | °C | 60 |

Technical data ETIM 7.0

| | | | |
|---|--|----|-------------------------|
| 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 (ecI@ss10.0.1-27-37-10-03 [AAB718015]) | | | |
| 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 - 27 |
| 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 | 38 |
| Rated operation power at AC-3, 400 V | | kW | 18.5 |
| Rated operation current Ie at AC-4, 400 V | | A | 15 |
| Rated operation power at AC-4, 400 V | | kW | 7 |
| Rated operation power NEMA | | kW | 0 |
| Modular version | | | No |
| Number of auxiliary contacts as normally open contact | | | 1 |
| Number of auxiliary contacts as normally closed contact | | | 1 |
| Type of electrical connection of main circuit | | | Spring clamp 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 |

Characteristics

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

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

