


**Contactor, 3 pole, 380 V 400 V 3 kW, 1 N/O, 220 V 50/60 Hz, AC operation, Push in terminals**



**Part no. DILM7-10(220V50/60HZ)-PI**  
**Catalog No. 199643**  
**Alternate Catalog No. XTCEPI007B10AO**

**Delivery program**

|                      |  |  |   |
|----------------------|--|--|---|
| Product range        |  |  | Contactors  |
| Application          |  |  | Contactors for Motors   |
| Subrange             |  |  | Contactors up to 95 A, 3 pole   |
| Utilization category |  |  | AC-1: Non-inductive or slightly inductive loads, resistance furnaces<br>AC-3/AC-3e: Normal AC induction motors: Starting, switching off while running<br>AC-4: Normal AC induction motors: starting, plugging, reversing, inching |
| Notes                |  |  | <br>Also suitable for motors with efficiency class IE3.   |
| Connection technique |  |  | Push in terminals   |
| Number of poles      |  |  | 3 pole  |

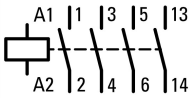
**Rated operational current**

|   |                |   |   |
|---|----------------|---|---|
| AC-3  |                |   |   |
| Notes   |                |   | At maximum permissible ambient temperature (open.)<br>Also tested according to AC-3e. |
| 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    |  |  |  |

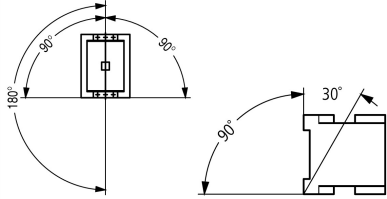
**Instructions**

|  |  |  |   |
|--|--|--|---|
| Can be combined with auxiliary contact |  |  | Contacts to EN 50 012.<br>DILM12-XHI...-PI<br>DILM32-XHI...-PI<br>DILA-XHI(V)...-PI |
| Actuating voltage                      |  |  | 220 V 50/60 Hz  |
| Voltage AC/DC                          |  |  | AC operation  |
| Connection to SmartWire-DT             |  |  | no  |

|            |  |   |
|------------|--|---|
| Frame size |  | 1 |
|------------|--|---|

## Technical data

### General

|   |                 |  |  |
|---|-----------------|--|--|
| Standards   |                 |  | IEC/EN 60947, VDE 0660, UL, CSA  |
| Operating frequency, mechanical                                       |                 |  |  |
| AC operated   | Operations/h    |  | 9000   |
| 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               |  | 5.7  |
| Auxiliary contacts  |                 |  |  |
| N/O contact   | g               |  | 3.4  |
| N/C contact   | g               |  | 3.4  |
| 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  |                 |  |  |
| AC operated   | kg              |  | 0.225  |
| Spring-loaded terminal connection                                     |                 |  |  |
| Tool  |                 |  |  |
| Standard screwdriver  |                 |  | 3.0 x 0.5  |
| Push-in terminals   |                 |  |  |
| Terminal capacity main cable  |                 |  |  |
| Solid   | mm <sup>2</sup> |  | 1 x (0,5 - 2,5)<br>2 x (0,5 - 2,5)   |
| flexible  | mm <sup>2</sup> |  | 1 x (0,5 - 2,5)<br>2 x (0,5 - 2,5)   |
| flexible with ferrules  | mm <sup>2</sup> |  | 1 x (0,5 - 1,5)<br>2 x (0,5 - 1,5)   |
| flexible with ultrasonic welded busbar end                            | mm <sup>2</sup> |  | 1 x (0,5 - 2,5)<br>2 x (0,5 - 2,5)   |
| flexible with uninsulated wire end ferrule                            | mm <sup>2</sup> |  | 1 x (1 - 6)<br>2 x (1 - 6)   |
| Solid or stranded   | AWG             |  | 20 - 14  |
| Stripping length  | mm              |  | 10   |
| Standard screwdriver  |                 |  | 3.0 x 0.5  |
| Terminal capacity control circuit cables                              |                 |  |  |
| Solid   | mm <sup>2</sup> |  | 1 x (0,5 - 2,5)<br>2 x (0,5 - 2,5)   |

|  |                 |                                    |
|--|-----------------|------------------------------------|
| flexible                                   | mm <sup>2</sup> | 1 x (0,5 - 2,5)<br>2 x (0,5 - 2,5) |
| flexible with ferrules                     | mm <sup>2</sup> | 1 x (0,5 - 1,5)<br>2 x (0,5 - 1,5) |
| flexible with ultrasonic welded busbar end | mm <sup>2</sup> | 1 x (0,5 - 2,5)<br>2 x (0,5 - 2,5) |
| flexible with uninsulated wire end ferrule | mm <sup>2</sup> | 1 x (0,5 - 2,5)<br>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 <sub>imp</sub> | V AC | 6000  |
| Overvoltage category/pollution degree  |                  |      | III/3 |
| Rated insulation voltage               | U <sub>i</sub>   | V AC | 690   |
| Rated operational voltage              | U <sub>e</sub>   | 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 <sub>th</sub> = I <sub>e</sub> | A | 22  |
| at 50 °C  | I <sub>th</sub> = I <sub>e</sub> | A | 21  |
| at 55 °C  | I <sub>th</sub> = I <sub>e</sub> | A | 21  |
| at 60 °C  | I <sub>th</sub> = I <sub>e</sub> | A | 20  |
| enclosed  | I <sub>th</sub>                  | A | 18  |
| Conventional free air thermal current, 1 pole             |                                  |   |   |
| open  | I <sub>th</sub>                  | A | 50  |
| enclosed  | I <sub>th</sub>                  | A | 45  |
| AC-3  |                                  |   |   |
| Rated operational current                                 |                                  |   |   |
| Open, 3-pole: 50 – 60 Hz                                  |                                  |   |   |
| Notes   |                                  |   | At maximum permissible ambient temperature (open.)<br>Also tested according to AC-3e. |
| 220 V 230 V   | I <sub>e</sub>                   | A | 7   |
| 240 V   | I <sub>e</sub>                   | A | 7   |
| 380 V 400 V   | I <sub>e</sub>                   | A | 7   |
| 415 V   | I <sub>e</sub>                   | A | 7   |

|                          |       |     |     |
|--------------------------|-------|-----|-----|
| 440V                     | $I_e$ | A   | 7   |
| 500 V                    | $I_e$ | A   | 5   |
| 660 V 690 V              | $I_e$ | A   | 4   |
| 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 |
| <b>AC-4</b>              |       |     |     |
| Open, 3-pole: 50 – 60 Hz |       |     |     |
| 220 V 230 V              | $I_e$ | A   | 5   |
| 240 V                    | $I_e$ | A   | 5   |
| 380 V 400 V              | $I_e$ | A   | 5   |
| 415 V                    | $I_e$ | A   | 5   |
| 440 V                    | $I_e$ | A   | 5   |
| 500 V                    | $I_e$ | A   | 4.5 |
| 660 V 690 V              | $I_e$ | 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 |

### Current heat loss

|  |    |     |
|--|----|-----|
| 3 pole, at $I_{th}$ (60°)                | W  | 2.4 |
| Current heat loss at $I_e$ to AC-3/400 V | W  | 0.3 |
| Impedance per pole                       | mΩ | 2.5 |

### Magnet systems

|   |               |          |  |
|---|---------------|----------|--|
| Voltage tolerance   |               |          |  |
| AC operated   | Pick-up       | $x U_c$  | 0.8 - 1.1  |
| Drop-out voltage AC operated                                  | Drop-out      | $x U_c$  | 0.3 - 0.6  |
| Power consumption of the coil in a cold state and 1.0 x $U_S$ |               |          |  |
| 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   |
| Duty factor   |               | % DF     | 100  |
| Changeover time at 100 % $U_S$ (recommended value)            |               |          |  |
| Main contacts   |               |          |  |
| AC operated   |               |          |  |
|   | Closing delay | ms       | 15 - 21  |
|   | Opening delay | ms       | 9 - 18   |
|   | Arcing time   | ms       | 10   |
| Lifespan, mechanical; Coil 50/60 Hz                           |               | $x 10^6$ | Mechanical lifespan at 50 Hz approx. 30% lower than under → Technical data general |

### 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<br>208 V  | HP | 1.5                     |
| 230 V<br>240 V  | HP | 2                       |
| 460 V<br>480 V  | HP | 3                       |
| 575 V<br>600 V  | HP | 5                       |
| Single-phase  |    |                         |
| 115 V<br>120 V  | HP | 0.25                    |
| 230 V<br>240 V  | HP | 1                       |
| General use   | A  | 20                      |
| Auxiliary contacts  |    |                         |
| Pilot Duty  |    |                         |
| AC operated   |    | A600                    |
| DC operated   |    | P300                    |
| General Use   |    |                         |
| AC  | V  | 600                     |
| AC  | A  | 10                      |
| DC  | V  | 250                     |
| DC  | A  | 1                       |
| Short Circuit Current Rating                              |    |                         |
| Basic Rating  |    |                         |
| SCCR  | kA | 5                       |
| max. Fuse   | A  | 45                      |
| max. CB   | A  | 60                      |
| 480 V High Fault  |    |                         |
| SCCR (fuse)   | kA | 30/100                  |
| max. Fuse   | A  | 25 Class RK5/20 Class J |
| SCCR (CB)   | kA | 65                      |
| max. CB   | A  | 16                      |
| 600 V High Fault  |    |                         |
| SCCR (fuse)   | kA | 30/100                  |
| max. Fuse   | A  | 25 Class RK5/20 Class J |
| Special Purpose Ratings                                   |    |                         |
| Electrical Discharge Lamps (Ballast)                      |    |                         |
| 480V 60Hz 3phase, 277V 60Hz 1phase                        | A  | 12                      |
| 600V 60Hz 3phase, 347V 60Hz 1phase                        | A  | 12                      |
| Incandescent Lamps (Tungsten)                             |    |                         |
| 480V 60Hz 3phase, 277V 60Hz 1phase                        | A  | 14                      |
| 600V 60Hz 3phase, 347V 60Hz 1phase                        | A  | 14                      |
| Resistance Air Heating                                    |    |                         |
| 480V 60Hz 3phase, 277V 60Hz 1phase                        | A  | 12                      |
| 600V 60Hz 3phase, 347V 60Hz 1phase                        | A  | 12                      |
| Refrigeration Control (CSA only)                          |    |                         |
| LRA 480V 60Hz 3phase                                      | A  | 60                      |
| FLA 480V 60Hz 3phase                                      | A  | 10                      |
| LRA 600V 60Hz 3phase                                      | A  | 60                      |
| FLA 600V 60Hz 3phase                                      | A  | 10                      |
| Definite Purpose Ratings (100,000 cycles acc. to UL 1995) |    |                         |
| LRA 480V 60Hz 3phase                                      | A  | 42                      |
| FLA 480V 60Hz 3phase                                      | A  | 7                       |
| Elevator Control  |    |                         |
| 200V 60Hz 3phase  | HP | 0.75                    |

|                  |    |     |
|------------------|----|-----|
| 200V 60Hz 3phase | A  | 3.7 |
| 240V 60Hz 3phase | HP | 1.5 |
| 240V 60Hz 3phase | A  | 6   |
| 480V 60Hz 3phase | HP | 2   |
| 480V 60Hz 3phase | A  | 3.4 |
| 600V 60Hz 3phase | HP | 3   |
| 600V 60Hz 3phase | A  | 3.9 |

## 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 (ecl@ss10.0.1-27-37-10-03 [AAB718015]) |    |                         |
| Rated control supply voltage Us at AC 50HZ  | V  | 220 - 220               |
| Rated control supply voltage Us at AC 60HZ  | V  | 220 - 220               |
| 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  | 22                      |
| 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 at AC-4, 400 V  | kW | 2.2                     |
| 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   |    | 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<br>2: Suppressor<br>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

