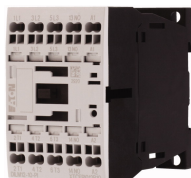


# DATASHEET - DILM12-10(24V50/60HZ)-PI



**Contactor, 3 pole, 380 V 400 V 5.5 kW, 1 N/O, 24 V 50/60 Hz, AC operation, Push in terminals**



**Part no.** DILM12-10(24V50/60HZ)-PI  
**Catalog No.** 199241  
**Alternate Catalog No.** XTCEPI012B10T

## 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                |  |  | 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 <sub>e</sub>                   | A | 12                                                                                    |
| AC-1                                                      |                                  |   |                                                                                       |
| Conventional free air thermal current, 3 pole, 50 - 60 Hz |                                  |   |                                                                                       |
| Open                                                      |                                  |   |                                                                                       |
| at 40 °C                                                  | I <sub>th</sub> = I <sub>e</sub> | A | 22                                                                                    |
| 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                                                                                    |

## Max. rating for three-phase motors, 50 - 60 Hz

|             |   |    |     |
|-------------|---|----|-----|
| AC-3        |   |    |     |
| 220 V 230 V | P | kW | 3.5 |
| 380 V 400 V | P | kW | 5.5 |
| 660 V 690 V | P | kW | 6.5 |
| AC-4        |   |    |     |
| 220 V 230 V | P | kW | 2   |
| 380 V 400 V | P | kW | 3   |
| 660 V 690 V | P | kW | 4.4 |

## Contacts

|                     |  |  |       |
|---------------------|--|--|-------|
| N/O = Normally open |  |  | 1 N/O |
| Contact sequence    |  |  |       |

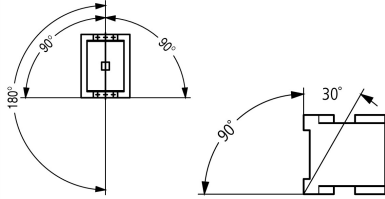
## Instructions

|                                        |  |  |                                                           |
|----------------------------------------|--|--|-----------------------------------------------------------|
| Can be combined with auxiliary contact |  |  | DILM12-XHI...-PI<br>DILM32-XHI...-PI<br>DILA-XHI(V)...-PI |
| Actuating voltage                      |  |  | 24 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              |  | 0.24                                                                               |
| 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    | 144   |
| Breaking capacity                      |                  |      |       |
| 220 V 230 V                            |                  | A    | 120   |
| 380 V 400 V                            |                  | A    | 120   |
| 500 V                                  |                  | A    | 100   |
| 660 V 690 V                            |                  | A    | 70    |
| 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    | 20    |
| Type "1" coordination                  |                  |      |       |
| 400 V                                  | gG/gL 500 V      | A    | 35    |
| 690 V                                  | gG/gL 690 V      | A    | 25    |

## 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 | 12                                                                                    |
| 240 V                                                     | I <sub>e</sub>                   | A | 12                                                                                    |
| 380 V 400 V                                               | I <sub>e</sub>                   | A | 12                                                                                    |
| 415 V                                                     | I <sub>e</sub>                   | A | 12                                                                                    |

|                          |                |     |     |
|--------------------------|----------------|-----|-----|
| 440V                     | I <sub>e</sub> | A   | 12  |
| 500 V                    | I <sub>e</sub> | A   | 10  |
| 660 V 690 V              | I <sub>e</sub> | A   | 7   |
| Motor rating             | P              | kWh |     |
| 220 V 230 V              | P              | kW  | 3.5 |
| 240V                     | P              | kW  | 4   |
| 380 V 400 V              | P              | kW  | 5.5 |
| 415 V                    | P              | kW  | 7   |
| 440 V                    | P              | kW  | 7.5 |
| 500 V                    | P              | kW  | 7   |
| 660 V 690 V              | P              | kW  | 6.5 |
| AC-4                     |                |     |     |
| Open, 3-pole: 50 – 60 Hz |                |     |     |
| 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   |
| 440 V                    | I <sub>e</sub> | A   | 7   |
| 500 V                    | I <sub>e</sub> | A   | 6   |
| 660 V 690 V              | I <sub>e</sub> | A   | 5   |
| Motor rating             | P              | kWh |     |
| 220 V 230 V              | P              | kW  | 2   |
| 240 V                    | P              | kW  | 2.2 |
| 380 V 400 V              | P              | kW  | 3   |
| 415 V                    | P              | kW  | 3.4 |
| 440 V                    | P              | kW  | 3.6 |
| 500 V                    | P              | kW  | 3.5 |
| 660 V 690 V              | P              | kW  | 4.4 |

Current heat loss

|                                                   |    |     |
|---------------------------------------------------|----|-----|
| 3 pole, at I <sub>th</sub> (60°)                  | W  | 2.5 |
| Current heat loss at I <sub>e</sub> to AC-3/400 V | W  | 0.9 |
| Impedance per pole                                | mΩ | 2.5 |

Magnet systems

|                                                                        |          |                   |                                                                                    |
|------------------------------------------------------------------------|----------|-------------------|------------------------------------------------------------------------------------|
| Voltage tolerance                                                      |          |                   |                                                                                    |
| 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                                                                          |
| Power consumption of the coil in a cold state and 1.0 x U <sub>S</sub> |          |                   |                                                                                    |
| 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 <sub>S</sub> (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 <sup>6</sup> | 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   | 3                       |      |
| 230 V<br>240 V                                            | HP   | 3                       |      |
| 460 V<br>480 V                                            | HP   | 10                      |      |
| 575 V<br>600 V                                            | HP   | 10                      |      |
| Single-phase                                              |      |                         |      |
| 115 V<br>120 V                                            | HP   | 1                       |      |
| 230 V<br>240 V                                            | HP   | 2                       |      |
| 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                              | SCCR |                         |      |
| 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 RK5/45 Class J |      |
| 600 V High Fault                                          |      |                         |      |
| SCCR (fuse)                                               | kA   | 30/100                  |      |
| max. Fuse                                                 | A    | 25 Class RK5/45 Class J |      |
| Special Purpose Ratings                                   |      |                         |      |
| Electrical Discharge Lamps (Ballast)                      |      |                         |      |
| 480V 60Hz 3phase, 277V 60Hz 1phase                        | A    | 20                      |      |
| 600V 60Hz 3phase, 347V 60Hz 1phase                        | A    | 20                      |      |
| 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    | 20                      |      |
| 600V 60Hz 3phase, 347V 60Hz 1phase                        | A    | 20                      |      |
| 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    | 72                      |      |
| FLA 480V 60Hz 3phase                                      | A    | 12                      |      |
| Elevator Control                                          |      |                         |      |
| 200V 60Hz 3phase                                          | HP   | 2                       |      |
| 200V 60Hz 3phase                                          | A    | 7.8                     |      |
| 240V 60Hz 3phase                                          | HP   | 2                       |      |

|                  |    |     |
|------------------|----|-----|
| 240V 60Hz 3phase | A  | 6.8 |
| 480V 60Hz 3phase | HP | 7.5 |
| 480V 60Hz 3phase | A  | 11  |
| 600V 60Hz 3phase | HP | 7.5 |
| 600V 60Hz 3phase | A  | 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  | 24 - 24                 |
| Rated control supply voltage Us at AC 60HZ                                                                                                                                            | V  | 24 - 24                 |
| 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  | 12                      |
| Rated operation power at AC-3, 400 V                                                                                                                                                  | kW | 5.5                     |
| Rated operation current Ie at AC-4, 400 V                                                                                                                                             | A  | 7                       |
| Rated operation power at AC-4, 400 V                                                                                                                                                  | kW | 3                       |
| 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                                            |
| 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

