



**DOL starter, 380 V 400 V 415 V: 7.5 kW, I<sub>r</sub>= 10 - 16 A, 230 V 50 Hz, 240 V 60 Hz, AC**

**Part no.** MSC-D-16-M15(230V50HZ)  
**Catalog No.** 100414  
**Alternate Catalog No.** XTSC016B015BFNL  
**EL-Nummer (Norway)** 4315108

## Delivery program

|                            |  |  |  |
|----------------------------|--|--|--|
| Basic function             |  |  | DOL starters (complete devices)                    |
| Basic device               |  |  | MSC  |
| Notes                      |  |  | Not suitable for motors with efficiency class IE3. |
| Connection to SmartWire-DT |  |  | no   |

## Motor ratings

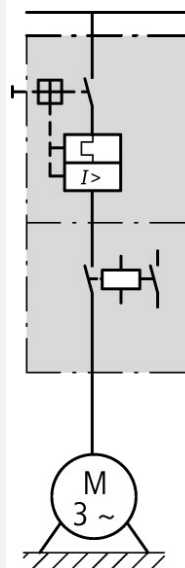
|   |                |    |      |
|---|----------------|----|------|
| Motor rating                            |                |    |      |
| AC-3                                    |                |    |      |
| 380 V 400 V 415 V                       | P              | kW | 7.5  |
| Rated operational current               |                |    |      |
| AC-3                                    |                |    |      |
| 380 V 400 V 415 V                       | I <sub>e</sub> | A  | 15.2 |
| Rated short-circuit current 380 - 415 V | I <sub>q</sub> | kA | 50   |

## Setting range

|                                    |                |   |         |
|------------------------------------|----------------|---|---------|
| Setting range of overload releases | I <sub>r</sub> | A | 10 - 16 |
|------------------------------------|----------------|---|---------|



|                  |  |  |                          |
|------------------|--|--|--------------------------|
| Coordination     |  |  | Type of coordination "1" |
| Contact sequence |  |  |                          |



|                   |  |  |                          |
|-------------------|--|--|--------------------------|
| Actuating voltage |  |  | 230 V 50 Hz, 240 V 60 Hz |
|                   |  |  | AC                       |

## Motor-protective circuit-breakers PKZM0-16

Contactor DILM15-10(...)

## DOL starter wiring set

Mechanical connection element and electrical electric contact module PKZM0-XDM12

## Notes

BK25/3-PKZ0-E extension terminal and if necessary B3.../...-PKZ0 three-phase commoning link can be added to motor-starter combinations to make Type F starters in accordance with UL508.

## Notes

The DOL starters (complete units) consist of a PKZM0 motor protective circuit breaker and a DILM contactor.

With the adapter-less top-hat rail mounting of starters up to 15 A, only the motor protective circuit breaker on the top-hat rail requires an adapter. The contactors are provided with mechanical support via a mechanical connection element.

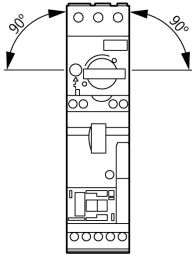
Control wire guide with max. 6 conductors up to 2.5 mm external diameter or 4 conductors up to 3.5 mm external diameter.

The connection of the main circuit between PKZ and contactor is established with electrical contact modules.

When using the auxiliary contacts DILA-XHIT... (→ 101042) the plug-in electrical connector can be removed without the removal of the front mounting auxiliary contact.

## Technical data

### General

|                   |  |  |  |
|-------------------|--|--|--|
| Standards         |  |  | IEC/EN 60947-4-1, VDE 0660   |
| Mounting position |  |  |  |

### Main conducting paths

|                                       |           |      |           |
|---------------------------------------|-----------|------|-----------|
| Rated impulse withstand voltage       | $U_{imp}$ | V AC | 6000      |
| Overvoltage category/pollution degree |           |      | III/3     |
| Rated operational voltage             | $U_e$     | V    | 230 - 415 |
| Rated operational current             |           |      |           |
| Open, 3-pole: 50 – 60 Hz              |           |      |           |
| 380 V 400 V                           | $I_e$     | A    | 15        |

### Additional technical data

|  |         |   |   |
|--|---------|---|---|
| Motor protective circuit breaker PKZM0, PKE                        |         |   | PKZM0 motor-protective circuit-breakers, see motor-protective circuit-breakers/<br>PKZM0 product group<br>DILM contactors, see contactor product group<br>DILET timing relay, ETR, see contactors, electronic timing relays product group |
| DILM contactors  |         |   |   |
| Current heat loss  |         |   |   |
| Current heat loss at $I_e$ to AC-3/400 V                           |         | W | 10.5  |
| Power consumption of the coil in a cold state and $1.0 \times U_S$ |         |   |   |
| Dual-voltage coil 50 Hz  | Sealing | W | 1.4   |

### Rating data for approved types

|                    |  |   |      |
|--------------------|--|---|------|
| Auxiliary contacts |  |   |      |
| Pilot Duty         |  |   |      |
| AC operated        |  |   | A600 |
| DC operated        |  |   | P300 |
| General Use        |  |   |      |
| AC                 |  | V | 600  |
| AC                 |  | A | 15   |
| DC                 |  | V | 250  |
| DC                 |  | A | 1    |

## Design verification as per IEC/EN 61439

|  |            |    |  |
|--|------------|----|--|
| Technical data for design verification                   |            |    |  |
| Rated operational current for specified heat dissipation | $I_n$      | A  | 15.5                                       |
| Heat dissipation per pole, current-dependent             | $P_{vid}$  | W  | 3.5  |
| Equipment heat dissipation, current-dependent            | $P_{vid}$  | W  | 10.5                                       |
| Static heat dissipation, non-current-dependent           | $P_{vs}$   | W  | 1.4  |
| Heat dissipation capacity                                | $P_{diss}$ | W  | 0  |
| Operating ambient temperature min.                       |            | °C | -25  |
| Operating ambient temperature max.                       |            | °C | 55   |
| 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 7.0

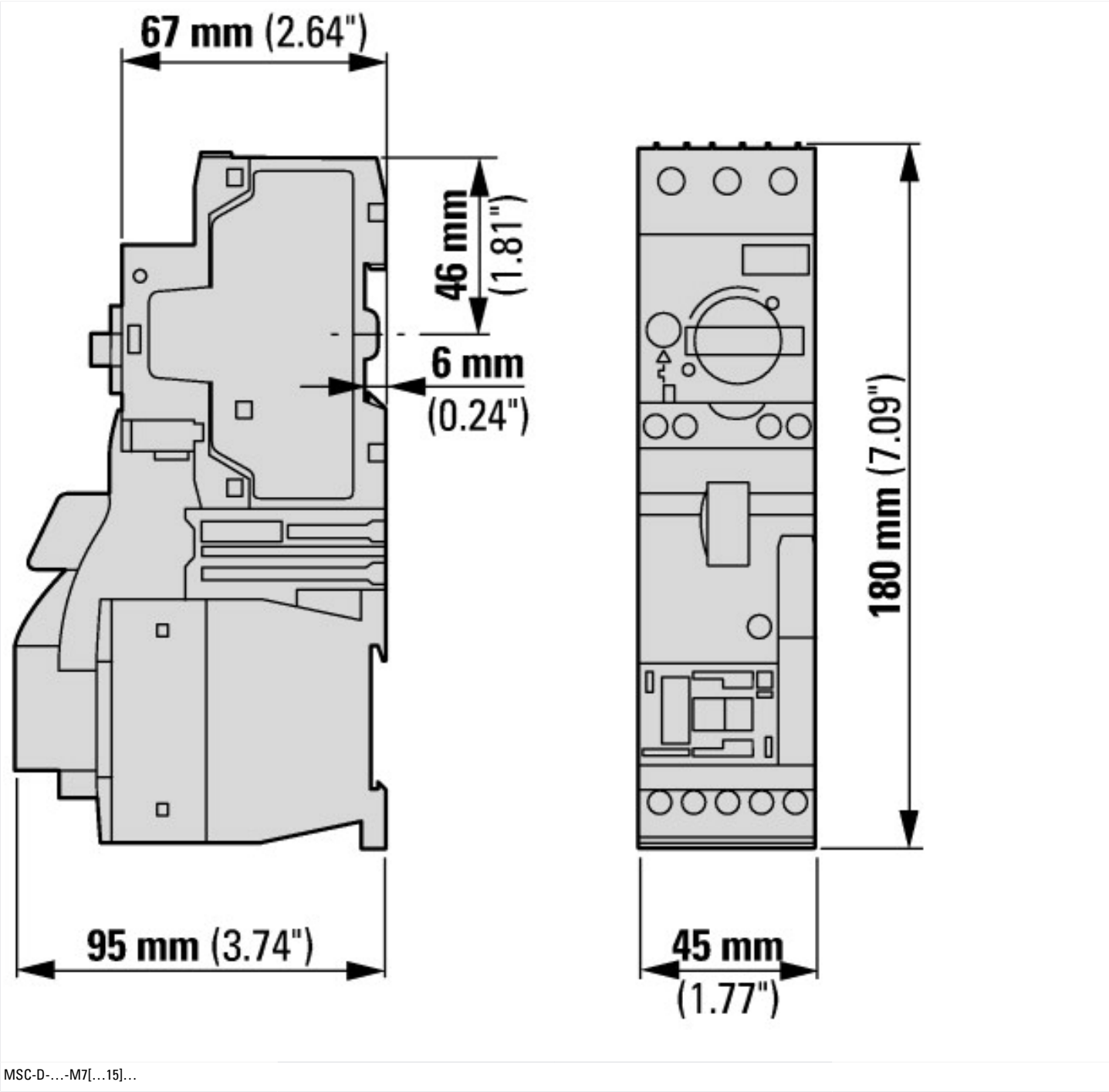
|  |    |                  |
|--|----|------------------|
| Low-voltage industrial components (EG000017) / Motor starter/Motor starter combination (EC001037)  |    |                  |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Load breakout, motor breakout / Motor starter combination (ecl@ss10.0.1-27-37-09-05 [AJZ718013]) |    |                  |
| Kind of motor starter  |    | Direct starter   |
| With short-circuit release   |    | Yes              |
| Rated control supply voltage Us at AC 50HZ   | V  | 230 - 230        |
| Rated control supply voltage Us at AC 60HZ   | V  | 0 - 0            |
| Rated control supply voltage Us at DC  | V  | 0 - 0            |
| Voltage type for actuating   |    | AC               |
| Rated operation power at AC-3, 230 V, 3-phase  | kW | 4                |
| Rated operation power at AC-3, 400 V   | kW | 7.5              |
| Rated power, 460 V, 60 Hz, 3-phase   | kW | 0                |
| Rated power, 575 V, 60 Hz, 3-phase   | kW | 0                |
| Rated operation current Ie   | A  | 15.2             |
| Rated operation current at AC-3, 400 V   | A  | 15               |
| Overload release current setting   | A  | 10 - 16          |
| Rated conditional short-circuit current, type 1, 480 Y/277 V   | A  | 0                |
| Rated conditional short-circuit current, type 1, 600 Y/347 V   | A  | 0                |
| Rated conditional short-circuit current, type 2, 230 V   | A  | 0                |
| Rated conditional short-circuit current, type 2, 400 V   | A  | 0                |
| Number of auxiliary contacts as normally open contact  |    | 1                |
| Number of auxiliary contacts as normally closed contact  |    | 0                |
| Ambient temperature, upper operating limit   | °C | 60               |
| Temperature compensated overload protection  |    | Yes              |
| Release class  |    | CLASS 10         |
| Type of electrical connection of main circuit  |    | Screw connection |
| Type of electrical connection for auxiliary- and control current circuit   |    | Screw connection |
| Rail mounting possible   |    | Yes              |
| With transformer   |    | No               |
| Number of command positions  |    | 0                |
| Suitable for emergency stop  |    | No               |

|   |  |    |         |
|---|--|----|---------|
| Coordination class according to IEC 60947-4-3       |  |    | Class 1 |
| Number of indicator lights                          |  |    | 0       |
| External reset possible                             |  |    | No      |
| With fuse   |  |    | No      |
| Degree of protection (IP)                           |  |    | IP20    |
| Degree of protection (NEMA)                         |  |    | Other   |
| Supporting protocol for TCP/IP                      |  |    | No      |
| Supporting protocol for PROFIBUS                    |  |    | No      |
| Supporting protocol for CAN                         |  |    | No      |
| Supporting protocol for INTERBUS                    |  |    | No      |
| Supporting protocol for ASI                         |  |    | No      |
| Supporting protocol for MODBUS                      |  |    | No      |
| Supporting protocol for Data-Highway                |  |    | No      |
| Supporting protocol for DeviceNet                   |  |    | No      |
| Supporting protocol for SUCONET                     |  |    | No      |
| Supporting protocol for LON                         |  |    | No      |
| Supporting protocol for PROFINET IO                 |  |    | No      |
| Supporting protocol for PROFINET CBA                |  |    | No      |
| Supporting protocol for SERCOS                      |  |    | No      |
| Supporting protocol for Foundation Fieldbus         |  |    | No      |
| Supporting protocol for EtherNet/IP                 |  |    | No      |
| Supporting protocol for AS-Interface Safety at Work |  |    | No      |
| Supporting protocol for DeviceNet Safety            |  |    | No      |
| Supporting protocol for INTERBUS-Safety             |  |    | No      |
| Supporting protocol for PROFIsafe                   |  |    | No      |
| Supporting protocol for SafetyBUS p                 |  |    | No      |
| Supporting protocol for other bus systems           |  |    | No      |
| Width   |  | mm | 45      |
| Height  |  | mm | 180     |
| Depth   |  | mm | 95      |

## 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.                          |  |  | E36332   |
| UL Category Control No.              |  |  | NLRV   |
| CSA File No.                         |  |  | 12528  |
| CSA Class No.                        |  |  | 3211-24  |
| North America Certification          |  |  | UL listed, CSA certified   |
| Specially designed for North America |  |  | No   |

Dimensions



Assets (links)

- Declaration of CE Conformity**  
00002885
- Instruction Leaflets**  
IL034038ZU2018\_06

Additional product information (links)

|  |   |
|--|---|
| <b>IL034038ZU (AWA1210-2246) Direct-on-line starter up to 15 A</b>         |   |
| IL034038ZU (AWA1210-2246) Direct-on-line starter up to 15 A                | <a href="ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL034038ZU2018_06.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL034038ZU2018_06.pdf</a>   |
| Motor starters and "Special Purpose Ratings" for the North American market | <a href="http://www.eaton.eu/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct_3258146.pdf">http://www.eaton.eu/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct_3258146.pdf</a> |
| Busbar Component Adapters for modern Industrial control panels             | <a href="http://www.moeller.net/binary/ver_techpapers/ver960en.pdf">http://www.moeller.net/binary/ver_techpapers/ver960en.pdf</a>   |
| Moeller_Online Selections Aids   | <a href="http://www.moeller.net/en/support/slider/index.jsp">http://www.moeller.net/en/support/slider/index.jsp</a>   |