



DOL starter, 380 V 400 V 415 V: 1.1, 1.5 kW, I<sub>r</sub>= 2.5 - 4 A, 24 V DC, DC voltage



**Part no.** MSC-D-4-M7(24VDC)/BBA  
**Catalog No.** 102970  
**Alternate Catalog No.** XTSC004B007BTDNL-A  
**EL-Nummer (Norway)** 4315431

**Delivery program**

Basic function				DOL starters (complete devices)
Basic device				MSC
Notes				Also suitable for motors with efficiency class IE3. IE3-ready devices are identified by the logo on their packaging.
Connection to SmartWire-DT				no
<b>Motor ratings</b>				
Motor rating				
AC-3				
380 V 400 V 415 V	P	kW		1.1 1.5
Rated operational current				
AC-3				
380 V 400 V 415 V	I <sub>e</sub>	A		2.6 3.6
Rated short-circuit current 380 - 415 V	I <sub>q</sub>	kA		100
<b>Setting range</b>				
Setting range of overload releases	I <sub>r</sub>	A		2.5 - 4
Coordination				Type of coordination "1" Type of coordination "2"
Contact sequence				
Actuating voltage				24 V DC DC voltage
<b>Motor-protective circuit-breakers</b> PKZM0-4				
Contactor DILM7-10(...)				
<b>DOL starter wiring set</b> 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. These combinations are mounted on the busbar adapters.

The connection of the main circuit between the motor protective circuit breaker and the contactor is established with an electrical contact module.

Cannot be combined with NHI-E...-PKZ0-C standard auxiliary contact with spring-cage terminal.

## Further information

Technical data PKZM0  
Accessories PKZ  
Technical data DILM  
Accessories DILM

## Page

→ PKZM0  
→ 072896  
→ DILM  
→ 281199

## Technical data

### General

Standards			UL 508 (on request) CSA C 22.2 No. 14 (on request)
Altitude		m	Max. 2000
Ambient temperature			-25 - +55

### 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	4

### Additional technical data

Motor protective circuit breaker PKZM0, PKE			PKZM0 motor-protective circuit-breakers, see motor-protective circuit-breakers/ PKZM0 product group DILM contactors, see contactor product group DILET timing relay, ETR, see contactors, electronic timing relays product group
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### Power consumption

DC operated	Sealing	W	3
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### 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
Short Circuit Current Rating		SCCR	
600 V High Fault			
SCCR (fuse)		kA	100
max. Fuse		A	1 Class J/CC

## Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	$I_n$	A	4
Heat dissipation per pole, current-dependent	$P_{vid}$	W	2
Equipment heat dissipation, current-dependent	$P_{vid}$	W	6
Static heat dissipation, non-current-dependent	$P_{vs}$	W	2.6
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])

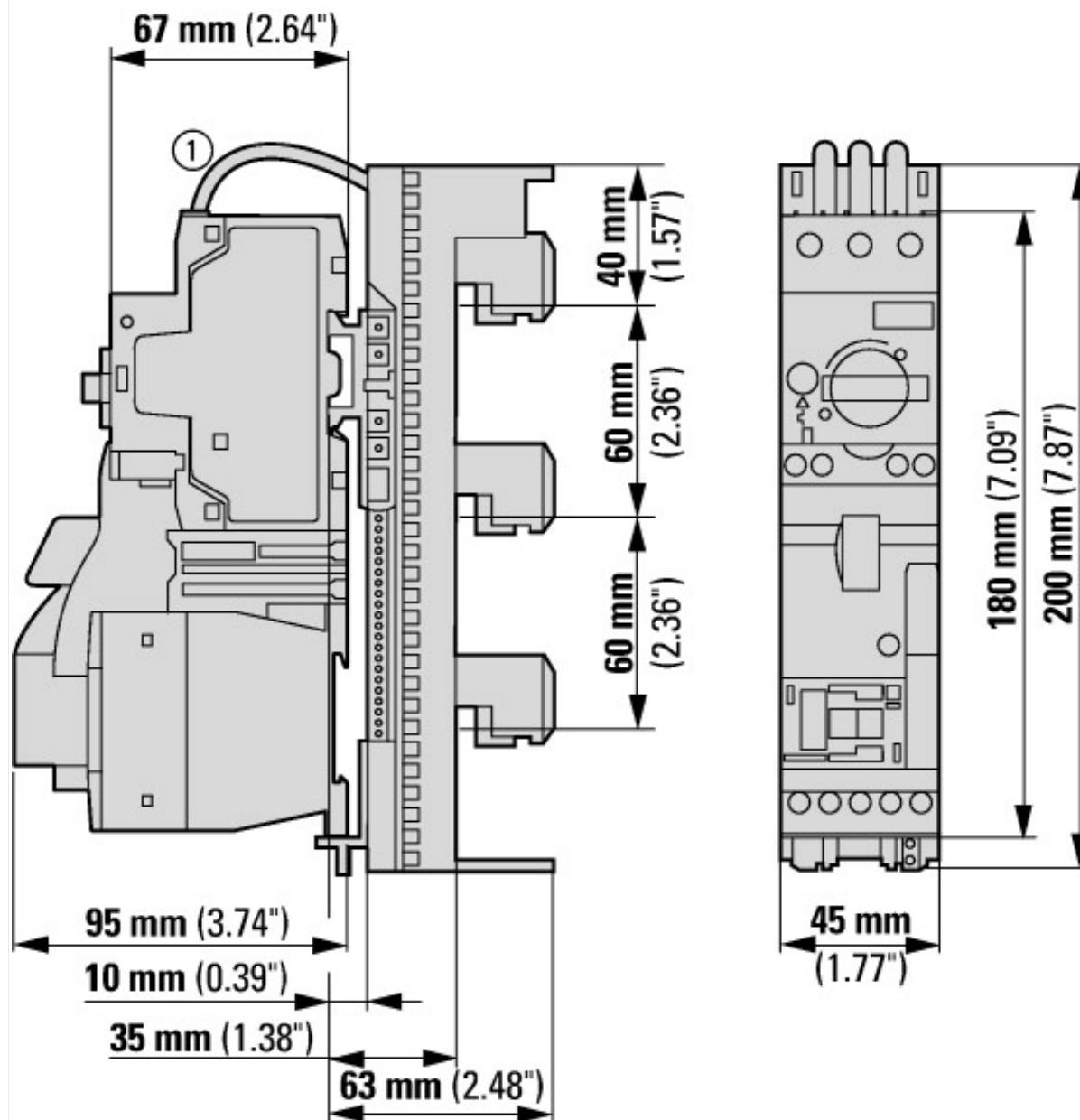
Kind of motor starter		Direct starter
With short-circuit release		Yes
Rated control supply voltage $U_s$ at AC 50HZ	V	0 - 0
Rated control supply voltage $U_s$ at AC 60HZ	V	0 - 0
Rated control supply voltage $U_s$ at DC	V	24 - 24
Voltage type for actuating		DC
Rated operation power at AC-3, 230 V, 3-phase	kW	0.75
Rated operation power at AC-3, 400 V	kW	1.5
Rated power, 460 V, 60 Hz, 3-phase	kW	0
Rated power, 575 V, 60 Hz, 3-phase	kW	0
Rated operation current $I_e$	A	3.6
Rated operation current at AC-3, 400 V	A	4
Overload release current setting	A	2.5 - 4
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	50000
Rated conditional short-circuit current, type 2, 400 V	A	50000
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 2
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	200
Depth	mm	154

## Approvals

Product Standards		UL60947-4-1A; CSA-C22.2 No. 14-10; IEC60947-4-1; CE marking
UL File No.		E123500
UL Category Control No.		NKJH
CSA File No.		12528
CSA Class No.		3211-04
North America Certification		UL listed, CSA certified
Specially designed for North America		No

## Dimensions



① l = 73 mm

MSC-D-...-M7[...15]BBA...

## Assets (links)

### Declaration of CE Conformity

00002885

### Instruction Leaflets

IL034038ZU2018\_06

## Additional product information (links)

### IL034038ZU (AWA1210-2246) Direct-on-line starter up to 15 A

IL034038ZU (AWA1210-2246) Direct-on-line starter up to 15 A

[ftp://ftp.moeller.net/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL034038ZU2018\\_06.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL034038ZU2018_06.pdf)

### IL03402015Z (AWA1210-2324) Busbar adapter

IL03402015Z (AWA1210-2324) Busbar adapter

[ftp://ftp.moeller.net/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL03402015Z2018\\_05.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03402015Z2018_05.pdf)

Motor starters and "Special Purpose Ratings" for the North American market

[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)

Busbar Component Adapters for modern Industrial control panels

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