



103003

MSC-R-4-M7(24VDC)/BBA

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## DELIVERY PROGRAM

Basic function  
Reversing starters (complete devices)

Basic device  
MSC



Notes  
Also suitable for motors with efficiency class IE3.

Connection technique  
Screw terminals

Connection to SmartWire-DT  
no

[Motor ratings](#)

Motor rating [P]  
AC-3  
380 V 400 V 415 V [P]  
1.1  
1.5 kW

Rated operational current  
AC-3  
380 V 400 V 415 V [I<sub>e</sub>]  
2.6  
3.6 A

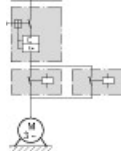
Rated short-circuit current 380 - 415 V [I<sub>k</sub>]  
100 kA

### Setting range

Setting range of overload releases  [I<sub>r</sub>]  
2.5 - 4 A

Coordination  
Type of coordination "1"  
Type of coordination "2"

Contact sequence



Actuating voltage  
24 V DC

DC voltage

**Motor-protective circuit-breakers**  
PKZM0-4 Type

**Contactor**  
DILM7-01(...) Part no.

### DOL starter wiring set

Mechanical connection element and electrical  
electric contact module  
PKZM0-XRM12 Type

### Notes

The reversing starter (complete units) consists of a PKZM0 motor protective circuit breaker and two DILM contactors.

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.

Complete units with mechanical interlock, starters up to 12 A also feature electrical interlock.

Further information	Page
Technical data PKZM0	<a href="#">□ PKZM0</a>
Accessories PKZ	<a href="#">□ 072896</a>
Technical data DILM	<a href="#">□ DILM</a>
Accessories DIL	<a href="#">□ 281199</a>

## TECHNICAL DATA

### General

#### Standards

UL 508 (on request)  
CSA C 22.2 No. 14 (on request)

Altitude  
Max. 2000 m

Ambient temperature  
-25 - +55

### Main conducting paths

Rated impulse withstand voltage [ $U_{imp}$ ]  
6000 V AC

Overvoltage category/pollution degree  
III/3

Rated operational voltage [ $U_e$ ]  
230 - 415 V

Rated operational current  
Open, 3-pole: 50 – 60 Hz  
380 V 400 V [I<sub>e</sub>]  
4 A

### 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

### Power consumption

DC operated [Sealing]  
3 W

### Rating data for approved types

Auxiliary contacts  
Pilot Duty  
AC operated  
A600

Auxiliary contacts  
Pilot Duty  
DC operated  
P300

Auxiliary contacts  
General Use  
AC  
600 V

Auxiliary contacts  
General Use  
AC  
15 A

Auxiliary contacts  
General Use  
DC  
250 V

Auxiliary contacts  
General Use  
DC  
1 A

## DESIGN VERIFICATION AS PER IEC/EN 61439

### Technical data for design verification

Rated operational current for specified heat  
dissipation [ $I_n$ ]  
4 A

Heat dissipation per pole, current-dependent [ $P_{vid}$ ]  
2 W

Equipment heat dissipation, current-dependent  
[ $P_{vid}$ ]  
6 W

Static heat dissipation, non-current-dependent [ $P_{vs}$ ]  
2.6 W

Heat dissipation capacity [ $P_{diss}$ ]  
0 W

Operating ambient temperature min.  
-25 °C

Operating ambient temperature max.  
+55 °C

### 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 Strength of materials and parts  
10.2.3.1 Verification of thermal stability of  
enclosures  
Meets the product standard's requirements.

10.2 Strength of materials and parts  
10.2.3.2 Verification of resistance of insulating materials to normal heat  
Meets the product standard's requirements.

10.2 Strength of materials and parts  
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 Strength of materials and parts  
10.2.4 Resistance to ultra-violet (UV) radiation  
Meets the product standard's requirements.

10.2 Strength of materials and parts  
10.2.5 Lifting  
Does not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts  
10.2.6 Mechanical impact  
Does not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts  
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 Insulation properties  
10.9.3 Impulse withstand voltage  
Is the panel builder's responsibility.

10.9 Insulation properties  
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  
Reversing starter

With short-circuit release  
Yes

Rated control supply voltage  $U_s$  at AC 50-Hz  
0 - 0 V

Rated control supply voltage  $U_s$  at AC 60-Hz  
0 - 0 V

Rated control supply voltage  $U_s$  at DC  
24 - 24 V

Voltage type for actuating  
DC

Rated operation power at AC-3, 230 V, 3-phase  
0.75 kW

Rated operation power at AC-3, 400 V  
1.5 kW

Rated power, 460 V, 60 Hz, 3-phase  
0 kW

Rated power, 575 V, 60 Hz, 3-phase  
0 kW

Rated operation current  $I_e$   
3.6 A

Rated operation current at AC-3, 400 V  
4 A

Overload release current setting  
2.5 - 4 A

Rated conditional short-circuit current, type 1, 480  
Y/277 V  
0 A

Rated conditional short-circuit current, type 1, 600  
Y/347 V  
0 A



Rated conditional short-circuit current, type 2, 230  
V  
50000 A

Rated conditional short-circuit current, type 2, 400  
V  
50000 A

Number of auxiliary contacts as normally open  
contact  
0

Number of auxiliary contacts as normally closed  
contact  
0

Ambient temperature, upper operating limit  
60 °C

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  
90 mm

Height  
200 mm

Depth  
154 mm

## 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

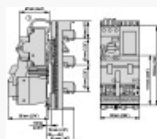
CSA File No.  
12528

CSA Class No.  
3211-04

North America Certification  
UL listed, CSA certified

Specially designed for North America  
No

## DIMENSIONS



□ I = 73 mm

MSC-R...-M7[...12]BBA...

