121740
MSC-DE-12-M7(24VDC)

DELIVERY PROGRAM

Basic function
DOL 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]
3 kW

Rated operational current
AC-3
380 V 400 V 415 V [I_e]
6.6 A

Rated short-circuit current 380 - 415 V [I_q]
100 kA

Setting range

Setting range of overload releases [I_r]
3 - 12 A

Coordination
Type of coordination “1”

Contact sequence

Actuating voltage
24 V DC

DC voltage

Motor-protective circuit-breakers
PKE12/XTU-12 Type

Contactor
DILM7-10(...) Part no.

DOL starter wiring set

Mechanical connection element and electrical
electric contact module
PKZM0-XDM12 Type

Notes

The DOL starters (complete units) consist of a PKE 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 PKE and contactor is established with electrical contact modules.

When using DILA-XHIT… auxiliary contacts with MSC-DE-... DOL starters, the plug-in electrical connectors can be removed without removing the front-mounted auxiliary contact.

Cannot be combined with NHI-E..PKZ0-C.

The MSC-DEA... DOL starters are prepared for communication via SmartWire-DT. For this, the PKE-SWD-32 communication module must be added.

Motor output/rated motor current

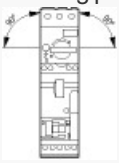
Motor rating	Rated motor current		
	AC-3		
	220 V 230 V 240 V	380 V 400 V	415 V
	I_q = 100 kA	I_q =100 kA	I_q = 50 kA
P	I	I	I
kW	A	A	A
0.75	3.2	-	-
1.1	4.6	-	-
1.5	6.3	3.6	3.6
2.2	-	5	5
3	-	6.6	6.6

TECHNICAL DATA

General

Standards
IEC/EN 60947-4-1, VDE 0660

Mounting position



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_e]
7 A

AC-4 cycle operation
Minimum current flow times
500 (Class 5)
700 (Class 10)
900 (Class 15)
1000 (Class 20) ms

AC-4 cycle operation
Minimum cut-out periods
500 ms

AC-4 cycle operation
Note
In AC-4 cycle operation, going below the minimum current flow time can cause overheating of the

load (motor).
For all combinations with an SWD activation, you need not adhere to the minimum current flow times and minimum cut-out periods. ms

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

DILM contactors
Current heat loss
Current heat loss at I_e to AC-3/400 V
1.32 W

Power consumption

DC operated [Sealing]
2.6 W

Rating data for approved types

Short Circuit Current Rating
Basic Rating
SCCR
10 kA

Short Circuit Current Rating
Basic Rating
max. Fuse
200 A

Short Circuit Current Rating
Basic Rating
max. CB
150 A

Short Circuit Current Rating
480 V High Fault
SCCR (fuse)
100 kA

Short Circuit Current Rating
480 V High Fault

max. Fuse
125 Class J/CC A

Short Circuit Current Rating
480 V High Fault
SCCR (CB)
65 kA

Short Circuit Current Rating
480 V High Fault
max. CB
100 A

Short Circuit Current Rating
600 V High Fault
SCCR (fuse)
100 kA

Short Circuit Current Rating
600 V High Fault
max. Fuse
125 Class J/CC A

DESIGN VERIFICATION AS PER IEC/EN 61439

Technical data for design verification

Rated operational current for specified heat dissipation [I_n]
7 A

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

Equipment heat dissipation, current-dependent [P_{vid}]
1.3 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
Direct starter

With short-circuit release
Yes

Rated control supply voltage Us at AC 50HZ
0 - 0 V

Rated control supply voltage Us at AC 60HZ
0 - 0 V

Rated control supply voltage Us at DC
24 - 24 V

Voltage type for actuating
DC

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

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

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

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

Rated operation current Ie
6.6 A

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

Overload release current setting
3 - 12 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
0 A

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

Number of auxiliary contacts as normally open contact
1

Number of auxiliary contacts as normally closed contact
0

Ambient temperature, upper operating limit
60 °C

Temperature compensated overload protection
Yes

Release class
Adjustable

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
45 mm

Height
198 mm

Depth
102 mm

DIMENSIONS

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