DATASHEET - MSC-DE-12-M9(230V50HZ)



DOL starter, 380 V 400 V 415 V: 4 kW, Iq= 100 kA, Ir= 3 - 12 A, 230 V 50 Hz, 240 V 60 Hz, AC voltage

Powering Business Worldwide*

Part no. MSC-DE-12-M9(230V50HZ)

Catalog No. 121741

Alternate Catalog XTSE012B009BFNL

No.

EL-Nummer 4315120

(Norway)

271 472 673 1410 .42			
Delivery program			
Basic function			DOL starters (complete devices)
Basic device			MSC
			IE3 ✓
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
Motor ratings			
Motor rating			
AC-3			
380 V 400 V 415 V	P	kW	4
Rated operational current			
AC-3			
380 V 400 V 415 V	I _e	Α	8.5
Rated short-circuit current 380 - 415 V	Iq	kA	100
Setting range			
Setting range of overload releases	l _r	А	3 - 12
Coordination			Type of coordination "1"
Contact sequence			M 3~
Actuating voltage			230 V 50 Hz, 240 V 60 Hz
Mater protective airquit breakers DVE12/VTII 12			AC voltage
Motor-protective circuit-breakers PKE12/XTU-12			
Contactor DILM9-10()			

DOL starter wiring set

Mechanical connection element and electrical electric contact module PKZM0-XDM12

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	380 V	415 V
	230 V	400 V	
	230 V	400 V	
	240 V		
	$I_q = 100 \text{ kA}$	I _q =100 kA	$I_q = 50 \text{ kA}$
P	Ĺ	Ĺ	ĺ
kW	A	A	A
0.75	3.2	-	-
1.1	4.6	-	-
1.5	6.3	3.6	3.6
2.2	8.7	5	5
3		6.6	6.6
4	-	8.5	8.5

IEC/EN 60947-4-1, VDE 0660

Technical data

General Standards

Otandardo			120/21/00017 11, 752 0000
Mounting position			
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	Α	9
AC-4 cycle operation			
Minimum current flow times		ms	500 (Class 5) 700 (Class 10) 900 (Class 15) 1000 (Class 20)
Minimum cut-out periods		ms	500
Note		ms	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.
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 $I_{\rm e}$ to AC-3/400 V		W	2.19
Power consumption of the coil in a cold state and 1.0 x U _S			

Dual-voltage coil 50 Hz	Sealing	W	1.4
Rating data for approved types			
Short Circuit Current Rating		SCCR	
Basic Rating			
SCCR		kA	5
max. Fuse		Α	125
max. CB		Α	125

Design verification as per IEC/EN 61439

Design vermeation as per reo, er vi 133			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	9
Heat dissipation per pole, current-dependent	P _{vid}	W	0.7
Equipment heat dissipation, current-dependent	P _{vid}	W	2.2
Static heat dissipation, non-current-dependent	P _{vs}	W	1.4
Heat dissipation capacity	P _{diss}	W	0
Operating ambient temperature min.	4.00	°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

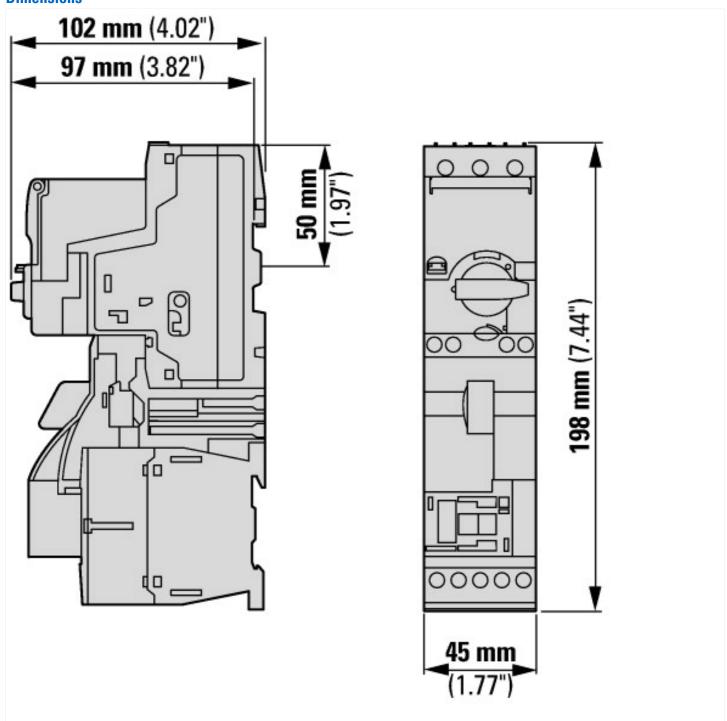
Low-voltage industrial components (EG000017) / Motor starter/Motor starter combination (EC001037)

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])

[A02710010])		
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

Risted operation power at AC-3, 200 V.S-phase kW 2 Risted operation power at AC-3, 200 V.S phase kW 0 Risted operation current le kW 0 Risted operation current at AC-3, 400 V A 8 Overboad release current at AC-3, 400 V A 9 Overboad release current setting A 3 12 Risted operation current, type 1, 480 V;277 V A 3 12 Risted conditional short-circuit current, type 1, 280 V;371 V A 0 0 Risted conditional short-circuit current, type 1, 230 V A 0 0 Risted conditional short-circuit current, type 2, 230 V A 0 0 Number of auxiliary contacts as normally open contact Y 0 0 Number of auxiliary contacts as normally open contact Y 0 0 Rolessa class A 0 0 0 Rolessa class A 0 0 0 Rolessa class A 0 0 0 Rull transformer Y 0
Rated power, 460 V, 60 Hz, 3-phase kW 0 Rated power, 575 V, 60 Hz, 3-phase kW 0 Rated power, 575 V, 60 Hz, 3-phase kW 0 Rated power, 575 V, 60 Hz, 3-phase kW 0 Rated portain current at AC-3, 400 V A 3 Overload release current setting A 0 Rated conditional short-circuit current, type 1, 480 Y/277 V A 0 Rated conditional short-circuit current, type 2, 230 V A 0 Rated conditional short-circuit current, type 2, 280 V A 0 Rated conditional short-circuit current, type 2, 280 V A 0 Rated conditional short-circuit current, type 2, 280 V A 0 Number of auxiliary contacts as normally open contact A 0 Number of auxiliary contacts as normally closed contact C 60 Release class C 60 60 Temperature compensated overload protection Yes 8 Release class C 60 60 Type of electrical connection of main circuit Yes No
Rated power, 575 V, 60 Hz, 3-phase kW 0 Rated operation current 1e A 3.5 Rated operation current at AC-3.400 V A 9 Overload release current setting A 3.12 Rated conditional short-circuit current, type 1,480 Y/277 V A 0 Rated conditional short-circuit current, type 1,690 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 closed contact P 0 Number of auxiliary contacts as normally closed contact P 0 Adhest trapperature, upper operating limit PC 0 Release class P 4 Ajustable Type of electrical connection of main circuit P 5 Screw connection Type of electrical connection of main circuit P 6 Screw connection Rail mounting possible P No With transformer P 1 Cass 1 Number of indicator lights P 1 Cass 1 External r
Rated operation current te AC-3, 400 V A 3 Overload release current setting A 3 - 12 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 closed contact Y 1 Number of auxiliary contacts as normally closed contact V 9 Ambent temperature, upper operating limit °C 60 Temperature compensated overload protection Yes Yes Release class Yes Screw connection Type of electrical connection for auxiliary- and control current circuit Yes Screw connection With transformer Yes No No Number of command positions Yes No Class 1 Number of indicator lights Yes Class 1 Class 1 External reset possible Yes No No Ex
Rated operation current at AC-3, 400 V A 9 Overload release current setting A 3 - 12 Rated conditional short-circuit current, type 1, 480 Y/37 V A 0 Rated conditional short-circuit current, type 1, 800 Y/347 V A 0 Rated conditional short-circuit current, type 2, 230 V A 0 Rated conditional short-circuit current, type 2, 230 V A 0 Number of auxiliary contacts as normally open contact P 1 Number of auxiliary contacts as normally closed contact °C 80 Ambient temperature, upper operating limit °C 80 Temperature compensated overload protection Yes Adjustable Type of electrical connection of main circuit Yes Screw connection Type of electrical connection for auxiliary- and control current circuit Yes Screw connection Rail mounting possible Yes No With transformer No No Number of command positions No Class 1 Number of indicator lights O Class 1 External reset possible No
Overload release current setting A 3 - 12 Rated conditional short-circuit current, type 1, 480 Y/277 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 Rated conditional short-circuit current, type 2, 400 V A 0 Number of auxiliary contacts as normally open contact 1 1 Number of auxiliary contacts as normally colosed contact 6 6 Ambient temperature, upper operating limit °C 66 Temperature compensated overload protection Yes Screw connection Release class Adjustable Screw connection Type of electrical connection of main circuit Yes Screw connection Vipe of electrical connection for auxiliary- and control current circuit Yes Screw connection Vipe of electrical connection for auxiliary and control current circuit Yes Screw connection Vipe of electrical connection for auxiliary and control current circuit Yes Screw connection Vipe of electrical connection for auxiliary and control current circuit Yes Screw connection <
Rated conditional short-circuit current, type 1, 480 Y/277 V
Rated conditional short-circuit current, type 1, 600 Y/347 V
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 closed contact 1 Ambient temperature, upper operating limit *C 60 Temperature compensated overload protection Yes Adjustable Release class Adjustable Screw connection Type of electrical connection of main circuit Screw connection Screw connection Rail mounting possible Yes No With transformer No No Number of command positions No No Suitable for emergency stop No No Coordination class according to IEC 60947-4-3 No No Suitable for emergency stop No Class 1 Cordination class according to IEC 60947-4-3 No No External reset possible No No With fuse No No Degree of protection (IP) No No Supporting protocol for TCP/IP No No
Rated conditional short-circuit current, type 2,400 V Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally closed contact Abbient temperature, upper operating limit Comperature compensated overload protection Release class Release class Type of electrical connection of main circuit Type of electrical connection for auxiliary- and control current circuit Rail mounting possible With transformer Number of command positions Suitable for emergency stop Coordination class according to IEC 60947-4-3 Number of indicator lights External reset possible With fuse Degree of protection (NEMA) Supporting protocol for TCP/IP Supporting protocol for PROFIBUS Supporting protocol for CAN B a l
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 Adjustable Release class Adjustable Screw connection Type of electrical connection of main circuit Screw connection Screw connection Type of electrical connection for auxiliary- and control current circuit Screw connection Screw connection Rail mounting possible Yes No With transformer No No Number of command positions O No Suitable for emergency stop No Class 1 Coordination class according to IEC 60947-4-3 Class 1 O Number of indicator lights O No External reset possible No No With fuse No No Degree of protection (IP) IP20 Possible (IP20) Degree of protection (NEMA) No No Supporting protocol for PROFIBUS No No
Number of auxiliary contacts as normally closed contact Ambient temperature, upper operating limit Temperature compensated overload protection Release class Type of electrical connection of main circuit Type of electrical connection for auxiliary- and control current circuit Rail mounting possible With transformer Number of command positions Suitable for emergency stop Coordination class according to IEC 60947-4-3 Number of indicator lights External reset possible With fuse Degree of protection (IP) Degree of protection (NEMA) Supporting protocol for TCP/IP Supporting protocol for PROFIBUS Supporting protocol for CAN No Council and temperature, upper operating limit **C** 60 **Yes* Adjustable Screw connection Screw connection **Screw connection **On **Other **Other **Upporting protocol for TCP/IP Supporting protocol for PROFIBUS Supporting protocol for PROFIBUS Supporting protocol for CAN
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Number of command positions Suitable for emergency stop No Coordination class according to IEC 60947-4-3 Number of indicator lights External reset possible No With fuse No Degree of protection (IP) Degree of protection (NEMA) Supporting protocol for TCP/IP Supporting protocol for PROFIBUS Supporting protocol for CAN No O Supporting protocol for CAN No No O Supporting protocol for CAN No O Supporting protocol for CAN No O Supporting protocol for CAN No No No No No No No No No
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Number of indicator lights External reset possible No With fuse No Degree of protection (IP) Degree of protection (NEMA) Supporting protocol for TCP/IP Supporting protocol for PROFIBUS No Supporting protocol for CAN No
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Supporting protocol for PROFIBUS Supporting protocol for CAN 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
Supporting protocol for other bus systems No
Width mm 45
Height mm 198
Depth mm 102

Dimensions



Assets (links)

Declaration of CE Conformity

00002889

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	
Moeller_Online Selections Aids	http://www.moeller.net/en/support/slider/index.jsp	