

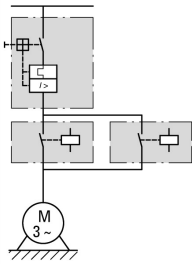




Reversing starter, 380 V 400 V 415 V: 5.5 kW,  $I_r = 8 - 12$  A, 230 V 50 Hz, 240 V 60 Hz, AC voltage

Part no. **MSC-R-12-M12(230V50HZ)/BBA**  
Catalog No. **102991**  
Alternate Catalog No. **XTSR012B012BFNL-A**  
EL-Nummer (Norway) **4315452**

## Delivery program

Basic function			Reversing 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	5.5
Rated operational current			
AC-3			
380 V 400 V 415 V	$I_e$	A	11.3
Rated short-circuit current 380 - 415 V	$I_q$	kA	100
<b>Setting range</b>			
Setting range of overload releases	$I_r$	A	8 - 12
			
Coordination			Type of coordination "1"
Contact sequence			
Actuating voltage			230 V 50 Hz, 240 V 60 Hz
			AC voltage

### Motor-protective circuit-breakers PKZM0-12

Contactor DILM12-01(...)

### DOL starter wiring set

Mechanical connection element and electrical electric contact module PKZM0-XRM12

### 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

Technical data PKZM0

Accessories PKZ

Technical data DILM

Accessories DIL

### Page

→ PKZM0

→ 072896

→ DILM

→ 281199

## Technical data

### General

Standards			UL 508 (on request) CSA C 22.2 No. 14 (on request)
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### 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	12

### 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			
Power consumption of the coil in a cold state and $1.0 \times U_S$			
Dual-voltage coil 50 Hz	Sealing	W	1.2

### 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	12
Heat dissipation per pole, current-dependent	$P_{vid}$	W	3.1
Equipment heat dissipation, current-dependent	$P_{vid}$	W	9.3
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

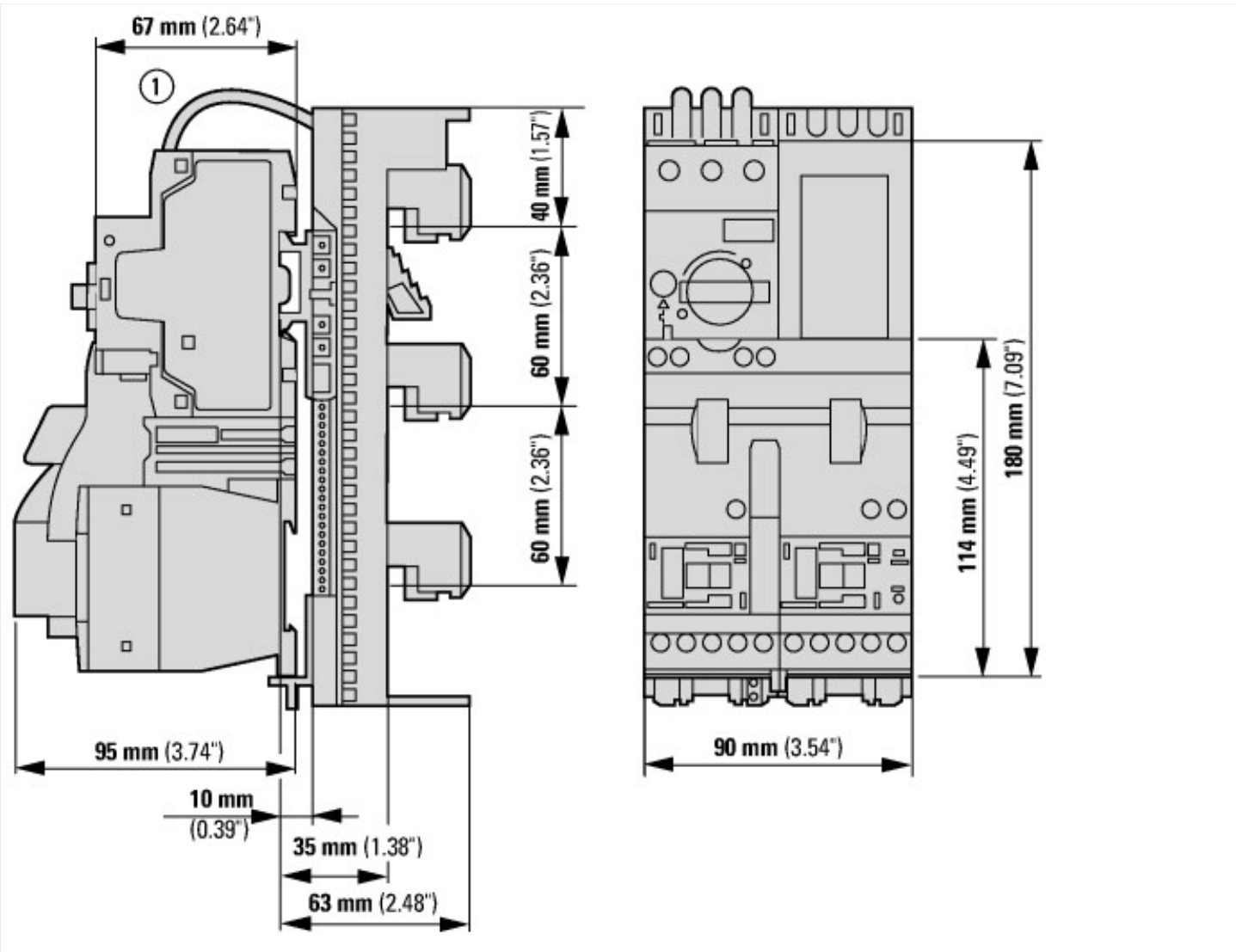
Low-voltage industrial components (EG000017) / Motor starter/Motor starter combination (EC001037)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Load breakout, motor breakout / Motor starter combination (ecl@ss10.0.1-27-37-09-05 [AJZ718013])			
Kind of motor starter			Reversing 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	3
Rated operation power at AC-3, 400 V		kW	5.5
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	11.3
Rated operation current at AC-3, 400 V		A	12
Overload release current setting		A	8 - 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 open contact			0
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	90
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-R-...-M7[...12]BBA...

Assets (links)

- Declaration of CE Conformity  
00002885
- Instruction Leaflets  
IL03402006Z2018\_04

Additional product information (links)

IL03402006Z (AWA1210-2248) Reversing starter to 12 A	
IL03402006Z (AWA1210-2248) Reversing starter to 12 A	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03402006Z2018_04.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03402006Z2018_04.pdf</a>
IL03402015Z (AWA1210-2324) Busbar adapter	
IL03402015Z (AWA1210-2324) Busbar adapter	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03402015Z2018_05.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03402015Z2018_05.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>