DATASHEET - MSC-R-2,5-M7(230V50HZ)



Reversing starter, 380 V 400 V 415 V: 0.75 kW, Ir= 1.6 - 2.5 A, 230 V 50 Hz, 240 V 60 Hz, AC voltage





MSC-R-2,5-M7(230V50HZ) 283178 log XTSR2P5B007BFNL

4365055

Delivery program

Basic function			Reversing 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	Р	kW	0.75
Rated operational current			
AC-3			
380 V 400 V 415 V	l _e	Α	1.9
Rated short-circuit current 380 - 415 V	Iq	kA	150
Setting range			
Setting range of overload releases	I _r	A	1.6 - 2.5
Coordination			Type of coordination "1" Type of coordination "2"
Contact sequence			
Actuating voltage			230 V 50 Hz, 240 V 60 Hz
			AC voltage
Motor-protective circuit-breakers PKZM0-2,5			
Contactor DILM7-01()			
DOL starter wiring set Mechanical connection element and electrical electric contact module PKZM0-XRM12			
Notes			

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

With the adapter-less top-hat rail mounting of starters up to 12 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 2.5mm external diameter or 4 conductors up to 3.5mm external diameter.

From 16 A, the motor-protective circuit-breakers and contactors are mounted on the top-hat rail adapter plate.

The connection of the main circuit between PKZ and contactor is established with electrical contact modules.

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

When using the auxiliary contacts DILA-XHIT... (-> 101042) the plug-in electrical connector can be removed without the removal of the front mounting auxiliary contact.

For further information

→ PKZM0
→ 072896
→ DILM
→ 276537
→ 281199

Technical data

General			
Standards			UL 508 (on request) CSA C 22.2 No. 14 (on request)
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			111/3
Rated operational voltage	Ue	V	230 - 415
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
380 V 400 V	I _e	А	2.5
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 x 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		А	15
DC		V	250
DC		А	1

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I _n	А	2.5
Heat dissipation per pole, current-dependent	P _{vid}	W	1.9
Equipment heat dissipation, current-dependent	P _{vid}	W	5.7
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])

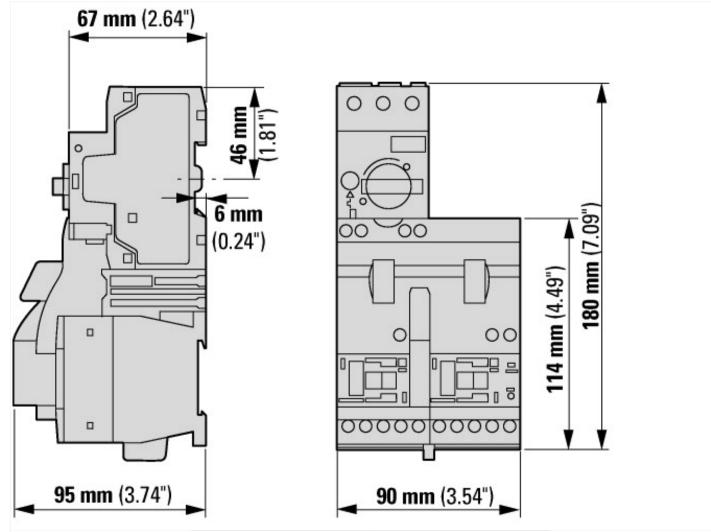
Kind of motor starter index Reversion starter With short-circuit raless V Sea Rated nortol supply volage Us a AC SMZ V 30-202 Rated nortol supply volage Us a AC SMZ V 0 Rated nortol supply volage Us a AC SMZ V 0 Rated nortol supply volage Us a AC SMZ V 0 Rated nortol supply volage Us a AC SMZ V 0 Rated nortol supply volage Us a AC SMZ V 0 Rated nortol supply volage Us a AC SMZ V 0 Rated nortol supply volage Us a AC SMZ V 0 Rated nortol SMZ SMZ SMZ V 0 Rated nortol SMZ SMZ SMZ SMZ V 0 Rated nortol SMZ	[AJZ/10013])		
Rete control supply voltage Us a AC 60HZ V 0 Rete control supply voltage Us a AC 60HZ V 0 Rete control supply voltage Us a CO 60HZ V 0 Nated control supply voltage Us a CO 60HZ V 0 Rete control supply voltage Us a CO 60HZ V 0 Rete control supply voltage Us a CO 60HZ V 0 Rete control supply voltage Us a CO 60HZ V 0 Rete control supply voltage Us a CO 60HZ V 0 Rete control supply voltage Us a CO 60HZ V 0 Rete control supply voltage Us a CO 60HZ V 0 Rete control supply voltage Us a CO 60HZ V 0 Rete control supply voltage Us a CO 60HZ V 0 Rete control supply voltage Us a CO 60HZ V 0 Rete control supply voltage Us a CO 60HZ V 0 Rete control supply voltage Us a CO 60HZ V 0 Rete control supply voltage Us a CO 60HZ V 0 Rete control supply voltage Us a CO 60HZ V 0 Rete control supply voltage Us a CO 60HZ V 0 Rete control supply voltage Us a CO 60HZ	Kind of motor starter		Reversing starter
Rete Number O Rete V 0 Rete V 0 Rete V 0 Rete V 0 Name V 0 Rete V V Rete V V<	With short-circuit release		Yes
Rated control supply voltage Us at DC 0 Voltage type for actuating C Rated operation power at AC-3, 230 V, 3-phase V 0.37 Rated operation power at AC-3, 400 V V 0 Rated power, 460 V, 60 Hz, 3-phase V 0 Rated power, 460 V, 60 Hz, 3-phase V 0 Rated power, 460 V, 60 Hz, 3-phase V 0 Rated power, 460 V, 60 Hz, 3-phase V 0 Rated power, 460 V, 60 Hz, 3-phase V 0 Rated power, 460 V, 60 Hz, 3-phase V 0 Rated power, 460 V, 60 Hz, 3-phase V 0 Rated power, 460 V, 60 Hz, 3-phase V 0 Rated power, 460 V, 60 Hz, 3-phase V 0 Rated power, 460 V, 60 Hz, 3-phase V 0 Rated power, 460 V, 60 Hz, 3-phase V 0 Rated power, 460 V, 60 Hz, 3-phase V 0 Rated power, 460 V, 60 Hz, 3-phase V 0 Rated power, 460 V, 60 Hz, 3-phase V 0 Rated power, 460 V, 60 Hz, 3-phase V 0 Rated conditional short-circuit current, type 1, 400 V/37 V A	Rated control supply voltage Us at AC 50HZ	V	230 - 230
Number of construction Image: Consterion	Rated control supply voltage Us at AC 60HZ	V	0 - 0
Retd operation power at AC-3, 200 V, 3-phase KW 037 Retd operation power at AC-3, 400 V 0.5 Retd operation power at AC-3, 400 V KW 0 Retd operation current le KW 0 Retd operation current le A 19 Retd operation current at AC-3, 400 V A 18-25 Overload release current setting A 18-25 Retd conditional short-circuit current, type 1, 480 V/277 V A 0 Retd conditional short-circuit current, type 2, 230 V A 0 Retd conditional short-circuit current, type 2, 230 V A 0 Number of auxiliary contacts as normally closed contact M 0 Number of auxiliary contacts as normally closed contact M 0 Release class C 6 0 Teip effectical connection of main circuit C 6 0 Yes of electrical connection of main circuit C Screw connection Teip effectical connection of main circuit C Screw connection Teip effectical connection of main circuit Screw connection Screw connectio	Rated control supply voltage Us at DC	V	0 - 0
Reta dperation power at AC-3, 400 V KW 75 Reta dperation power at AC-3, 400 V KW 0 Reta dpower, 450 V, 60 Hz, 3-phase KW 0 Reta dpower, 450 V, 60 Hz, 3-phase KW 0 Reta dperation current I KW 0 Reta dperation current I S 5 Reta dperation current at AC-3, 400 V KW 0 Overload release current setting A 15 Reta donditional short-circuit current, type 1, 480 Y/277 V A 0 Reta donditional short-circuit current, type 1, 680 Y/347 V A 0 Reta donditional short-circuit current, type 2, 230 V A 0000 Number of auxiliary contacts as normally copen contact A 0000 Number of auxiliary contacts as normally closed contact Y 6 Release class C Socomection Rupe of electrical connection of main circuit Y Y Type of electrical connection framiliary and control current circuit Y Socrew connection Rive and functing possible Y Socrew connection Rin m	Voltage type for actuating		AC
Rated power, 40 V, 60 Hz, 3-phase KW 0 Rated power, 57 SV, 60 Hz, 3-phase KW 0 Rated power, 57 SV, 60 Hz, 3-phase KW 0 Rated power, 57 SV, 60 Hz, 3-phase S 0 Rated power, 57 SV, 60 Hz, 3-phase S 0 Rated power, 40 V, 60 Hz, 3-phase S 0 Rated power, 40 V, 60 Hz, 3-phase S 0 Rated power, 40 V, 60 Hz, 3-phase S 0 Rated power, 40 V, 60 Hz, 3-phase S 0 Overload release current setting S 0 Rated conditional short-circuit current, type 1, 400 V/277 V G 0 Rated conditional short-circuit current, type 2, 230 V A 5000 Rated conditional short-circuit current, type 2, 200 V A 0 Nuber of auxiliary contacts as normally closed contact Main 5000 Nuber of auxiliary contacts as normally closed contact S S Release class C S S Type of electrical connection of main circuit S Serve connection Type of electrical connection fraux	Rated operation power at AC-3, 230 V, 3-phase	kW	0.37
Rade gower, 575 V, 60 H2, 3-phase KW 0 Rade operation current I A 19 Rated operation current A C-3, 400 V A 25 Overload release current setting Is - 25 Is - 25 Rated operation current type 1, 480 Y/277 V 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, 400 V F 0 Number of auxiliary contacts as normally open contact F 0 Number of auxiliary contacts as normally colscatorat F 0 Release class F 0 1 Release class F F F Right connection of main circuit F F F Release class F F F F Right connection of main circuit F F F F Release class F F F F F F F F F F <td>Rated operation power at AC-3, 400 V</td> <td>kW</td> <td>0.75</td>	Rated operation power at AC-3, 400 V	kW	0.75
Rated operation current le A I Rated operation current at AC-3, 400 V A A Overload release current setting A A Rated operation current at AC-3, 400 V A B Overload release current setting A A Rated conditional short-circuit current, type 1, 480 V/277 V A D Rated conditional short-circuit current, type 1, 600 V/347 V A D Rated conditional short-circuit current, type 2, 230 V A S0000 Number of auxiliary contacts as normally open contact M S0000 Number of auxiliary contacts as normally closed contact F O Number of auxiliary contacts as normally closed contact F G Release class C A Scienconnection Pip of electrical connection of main circuit F Scienconnection Scienconnection Yes of electrical connection for auxiliary- and control current circuit F Scienconnection Scienconnection Yes of electrical connection for auxiliary- and control current circuit F Scienconnection Scienconnection Yes of electri	Rated power, 460 V, 60 Hz, 3-phase	kW	0
Alter operation current at AC-3,400 V A 5 Overload release current setting IA I	Rated power, 575 V, 60 Hz, 3-phase	kW	0
Overload release current setting A 6.2.5 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 0000 Rated conditional short-circuit current, type 2, 400 V A 0000 Number of auxiliary contacts as normally open contact 0 0 Number of auxiliary contacts as normally closed contact 0 0 Ambient temperature, upper operating limit C 0 0 Release class C 0 0 0 Release class CLASS 10 Current connection Curent c	Rated operation current le	А	1.9
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 0000 Rated conditional short-circuit current, type 2, 400 V A 0 Number of auxiliary contacts as normally open contact O 0 Number of auxiliary contacts as normally closed contact O 0 Release class CLASS 10 0 Type of electrical connection of main circuit Screw connection Screw connection Rait mounting possible Yes No No With transformer Yes No No Mumber of command positions Yes No No	Rated operation current at AC-3, 400 V	А	2.5
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 0 0 Number of auxiliary contacts as normally closed contact 0 0 Ambient temperature, upper operating limit C 6 Release class Yes CLASS 10 Type of electrical connection of main circuit Screw connection Screw connection Yup of electrical connection for auxiliary- and control current circuit Yes Screw connection With transformer Yes Screw connection With transformer Yes Screw connection With transformer Yes Screw connection Number of command positions Yes Screw connection	Overload release current setting	А	1.6 - 2.5
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 0 0 Number of auxiliary contacts as normally closed contact 0 0 Ambient temperature, upper operating limit 6 6 0 Release class CLASS 10 CLASS 10 Type of electrical connection of main circuit Screw connection Screw connection Rail mounting possible Yes No With transformer Yes No Number of command positions Yes No	Rated conditional short-circuit current, type 1, 480 Y/277 V	А	0
Rated conditional short-circuit current, type 2, 400 V A 5000 Number of auxiliary contacts as normally open contact 0 0 Number of auxiliary contacts as normally closed contact 0 0 Ambient temperature, upper operating limit C 6 Temperature compensated overload protection P 6 Release class CLASS 10 CLASS 10 Type of electrical connection of main circuit F Screw connection Rail mounting possible F Screw connection With transformer No Screw connection With transformer No Screw connection Number of command positions Screw connection	Rated conditional short-circuit current, type 1, 600 Y/347 V	А	0
Number of auxiliary contacts as normally open contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact contact contacts as norma	Rated conditional short-circuit current, type 2, 230 V	А	50000
Number of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contact Image: Contact of auxiliary contacts as normally closed contacts Image: Contact of auxiliary contacts as normally closed contacts Image: Contact of auxiliary contacts as normally closed contacts Image: Contact of auxiliary contact contact Image: Contact contact contact contact Image: Contact	Rated conditional short-circuit current, type 2, 400 V	А	50000
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 Yes Rail mounting possible Yes With transformer Yes Number of command positions Yes Strew connection No	Number of auxiliary contacts as normally open contact		0
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 Image: Strew connection of main circuit	Number of auxiliary contacts as normally closed contact		0
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 Screw connection	Ambient temperature, upper operating limit	٥°	60
Type of electrical connection of main circuit Pail Book 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 Screw connection	Temperature compensated overload protection		Yes
Type of electrical connection for auxiliary- and control current circuit Main possible Screw connection With transformer No No Number of command positions Image: Command position in the post post post post post post post post	Release class		CLASS 10
Rail mounting possible Yes With transformer Mo Number of command positions Mo	Type of electrical connection of main circuit		Screw connection
With transformer No Number of command positions Image: Command position state s	Type of electrical connection for auxiliary- and control current circuit		Screw connection
Number of command positions 0	Rail mounting possible		Yes
	With transformer		No
Suitable for emergency stop 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	90
Height	mm	180
Depth	mm	95

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.	3211-24
North America Certification	UL listed, CSA certified
Specially designed for North America	No

Dimensions



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

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	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03402006Z2018_04.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
Busbar Component Adapters for modern Industrial control panels	http://www.moeller.net/binary/ver_techpapers/ver960en.pdf