# **DATASHEET - MSC-D-0,25-M7(230V50HZ)**



DOL starter, 3p, 0.06kW/400V/AC3, 150kA

MSC-D-0,25-M7(230V50HZ) Part no. 281925

Catalog No.

Alternate Catalog XTSCP25B007BFNL

**EL-Nummer** (Norway)

4365022



olivory program			
elivery program asic function			DOL starters (complete devices)
asic device			MSC
asic device			IE3 ✓
otes			Also suitable for motors with efficiency class IE3. IE3-ready devices are identified by the logo on their packaging.
onnection to SmartWire-DT			no
Notor ratings			
Motor rating			
AC-3			
380 V 400 V 415 V	P	kW	0.06
Rated operational current			
AC-3			
380 V 400 V 415 V	l <sub>e</sub>	Α	0.21
Rated short-circuit current 380 - 415 V	Iq	kA	150
etting range			
Setting range of overload releases	I <sub>r</sub>	Α	0.16 - 0.25
oordination			Type of coordination "1" Type of coordination "2"
ontact sequence			M 3~
ctuating voltage			230 V 50 Hz, 240 V 60 Hz
			AC
lotor-protective circuit-breakers PKZM0-0,25			
ontactor DILM7-10()			

Mechanical connection element and electrical electric contact module PKZM0-XDM12

#### Notes

BK25/3-PKZ0-E extension terminal and if necessary B3.../...-PKZ0 three-phase commoning link can be added to motor-starter combinations to make Type F starters in accordance with UL508.

#### Notes

The DOL starters (complete units) consist of a PKZM0 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 PKZ and contactor is established with electrical contact modules.

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.

## **Technical data**

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

#### **Main conducting paths**

Rated impulse withstand voltage	$U_{imp}$	V AC	6000
Overvoltage category/pollution degree			III/3
Rated operational voltage	U <sub>e</sub>	V	230 - 415
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
380 V 400 V	I <sub>e</sub>	Α	0.25

#### 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 <sub>e</sub> to AC-3/400 V		W	5.7
Power consumption of the coil in a cold state and 1.0 x $\ensuremath{\text{U}_{\text{S}}}$			
Dual-voltage coil 50 Hz	Sealing	W	1.4
Additional features			→ Chapter 5

#### Rating data for approved types

Auxiliary contacts			
Pilot Duty			
AC operated			A600
DC operated			P300
General Use			
AC	\	<b>V</b>	600
AC	,	Д	15
DC	\	/	250
DC	,	Д	1

# Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	0.25
Heat dissipation per pole, current-dependent	$P_{\text{vid}}$	W	1.9
Equipment heat dissipation, current-dependent	$P_{\text{vid}}$	W	5.7
Static heat dissipation, non-current-dependent	$P_{vs}$	W	1.4

Heat dissipation capacity	P <sub>diss</sub>	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 switch gear must be observed. $\label{eq:constraint}$
10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switch gear must be observed. $\label{eq:constraint}$
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         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         AC           Rated operation power at AC-3, 230 V, 3-phase         kW         0.04           Rated operation power at AC-3, 400 V         kW         0.06           Rated power, 460 V, 60 Hz, 3-phase         kW         0           Rated operation current Ie         A         0.21           Rated operation current at AC-3, 400 V         A         0.25           Rated operation current at AC-3, 400 V         A         0.25           Rated operation current type 1, 480 V/277 V         A         0           Rated conditional short-circuit current, type 1, 600 V/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 closed contact         C         6           Ambient temperature, upper operating limit	[A02/10010]/		
Rated control supply voltage Us at AC 50HZ Rated control supply voltage Us at AC 60HZ Rated control supply voltage Us at AC 60HZ Voltage type for actuating Rated power at AC-3,230 V, 3-phase Rated operation power at AC-3,230 V, 3-phase Rated operation power at AC-3,400 V Rated power, 460 V, 60 Hz, 3-phase Rated power, 575 V, 60 Hz, 3-phase Rated operation current le Rated operation current at AC-3,400 V Rated operation current tel Rated conditional short-circuit current, type 1,480 Y/277 V Rated conditional short-circuit current, type 1,480 Y/277 V Rated conditional short-circuit current, type 2,230 V Rated conditional short-circuit current, type 2,230 V Rated conditional short-circuit current, type 2,400 V Rumber of auxiliary contacts as normally open contact Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally closed contact Abient temperature, upper operating limit  V D Rated Control supply voltage Us at AC 60H Rated Control supply voltage Us at AC 60H Rated Conditional short-circuit current, type 2,400 V Rumber of auxiliary contacts as normally closed contact Abient temperature, upper operating limit  V D Rated Control supply voltage Us at AC 60H Rated Control supply voltage Us at AC 60H Rated Conditional short-circuit current, type 2,400 V Rumber of auxiliary contacts as normally closed contact Rated Control supply voltage Us at AC 60H Rated Control supply voltage	Kind of motor starter		Direct starter
Rated control supply voltage Us at AC 60HZ  Rated control supply voltage Us at DC  Voltage type for actuating  Rated operation power at AC-3, 230 V, 3-phase  Rated operation power at AC-3, 230 V, 3-phase  Rated operation power at AC-3, 400 V  Rated operation power, 460 V, 60 Hz, 3-phase  Rated operation current le  Rated operation current at AC-3, 400 V  Rated operation current at AC-3, 400 V  Rated operation current le  Rated operation current at AC-3, 400 V  A 0.21  Rated operation current setting  Overload release current setting  Rated conditional short-circuit current, type 1, 480 Y/277 V  Rated conditional short-circuit current, type 1, 480 Y/377 V  Rated conditional short-circuit current, type 2, 230 V  Rated conditional short-circuit current, type 2, 230 V  Rated conditional short-circuit current, type 2, 400 V  Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as normally closed contact	With short-circuit release		Yes
Rated control supply voltage Us at DC  Voltage type for actuating Rated operation power at AC-3, 230 V, 3-phase  Rated operation power at AC-3, 400 V  Rated operation power at AC-3, 400 V  Rated power, 460 V, 60 Hz, 3-phase  Rated operation current le  Rated operation current at AC-3, 400 V  Rated operation current at AC-3, 400 V  Rated operation current at AC-3, 400 V  Rated operation current setting  Rated conditional short-circuit current, type 1, 480 Y/277 V  Rated conditional short-circuit current, type 1, 480 Y/277 V  Rated conditional short-circuit current, type 2, 230 V  Rated conditional short-circuit current, type 2, 400 V  Rate	Rated control supply voltage Us at AC 50HZ	V	230 - 230
Voltage type for actuating Rated operation power at AC-3, 230 V, 3-phase Rated operation power at AC-3, 400 V Rated operation power at AC-3, 400 V Rated power, 460 V, 60 Hz, 3-phase Rated power, 575 V, 60 Hz, 3-phase Rated power, 575 V, 60 Hz, 3-phase Rated operation current le Rated operation current at AC-3, 400 V Rated conditional short-circuit current, type 1, 480 V/277 V Rated conditional short-circuit current, type 1, 480 V/277 V Rated conditional short-circuit current, type 2, 230 V Rated conditional short-circuit current, type 2, 230 V Rated conditional short-circuit current, type 2, 400 V Rated conditional short-circuit current, type 2, 400 V Rumber of auxiliary contacts as normally closed contact Rumber of auxiliary contacts as normally closed contact Rational contact Rated conditional short-circuit current, type 2, 400 V Rumber of auxiliary contacts as normally closed contact Rumber of auxiliary contacts as normally closed contact Rumber of auxiliary contacts as normally closed contact Rated conditional short-circuit current, type 2, 400 V Rumber of auxiliary contacts as normally closed contact Rumber of auxiliary co	Rated control supply voltage Us at AC 60HZ	V	0 - 0
Rated operation power at AC-3, 230 V, 3-phase	Rated control supply voltage Us at DC	V	0 - 0
Rated operation power at AC-3, 400 V Rated power, 460 V, 60 Hz, 3-phase	Voltage type for actuating		AC
Rated power, 460 V, 60 Hz, 3-phase kW 0 Rated power, 575 V, 60 Hz, 3-phase kW 0 Rated operation current le A 0.21 Rated operation current at AC-3, 400 V A 0.25 Overload release current setting A 0.16 - 0.25 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 50000 Rated conditional short-circuit current, type 2, 400 V A 50000 Number of auxiliary contacts as normally open contact	Rated operation power at AC-3, 230 V, 3-phase	kW	0.04
Rated power, 575 V, 60 Hz, 3-phase kW 0 Rated operation current le A 0.21 Rated operation current at AC-3, 400 V A 0.25 Overload release current setting A 0.16 - 0.25 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 50000 Rated conditional short-circuit current, type 2, 400 V A 50000 Number of auxiliary contacts as normally open contact 1 Number of auxiliary contacts as normally closed contact 0 Ambient temperature, upper operating limit °C 660	Rated operation power at AC-3, 400 V	kW	0.06
Rated operation current le Rated operation current at AC-3, 400 V A 0.25  Overload release current setting A 0.16 - 0.25  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 8 50000 Rated conditional short-circuit current, type 2, 400 V A 50000  Number of auxiliary contacts as normally open contact Number of auxiliary contacts as normally closed contact Ambient temperature, upper operating limit C 0 60	Rated power, 460 V, 60 Hz, 3-phase	kW	0
Rated operation current at AC-3, 400 V  Overload release current setting  A  0.16 - 0.25  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  50000  Rated conditional short-circuit current, type 2, 230 V  A  50000  Rated conditional short-circuit current, type 2, 400 V  Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as normally closed contact  Ambient temperature, upper operating limit  C  60	Rated power, 575 V, 60 Hz, 3-phase	kW	0
Overload release current setting  A 0.16 - 0.25  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 50000  Rated conditional short-circuit current, type 2, 400 V  A 50000  Number of auxiliary contacts as normally open contact  1  Number of auxiliary contacts as normally closed contact  Ambient temperature, upper operating limit  C 60	Rated operation current le	Α	0.21
Rated conditional short-circuit current, type 1, 480 Y/277 V  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  1  Number of auxiliary contacts as normally closed contact  Ambient temperature, upper operating limit  C 60	Rated operation current at AC-3, 400 V	Α	0.25
Rated conditional short-circuit current, type 1, 600 Y/347 V  Rated conditional short-circuit current, type 2, 230 V  Rated conditional short-circuit current, type 2, 400 V  Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as normally closed contact  Ambient temperature, upper operating limit  A  0  1  1  C  60	Overload release current setting	Α	0.16 - 0.25
Rated conditional short-circuit current, type 2, 230 V  Rated conditional short-circuit current, type 2, 400 V  A 50000  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	Rated conditional short-circuit current, type 1, 480 Y/277 V	Α	0
Rated conditional short-circuit current, type 2, 400 V  Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as normally closed contact  Ambient temperature, upper operating limit	Rated conditional short-circuit current, type 1, 600 Y/347 V	Α	0
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	Rated conditional short-circuit current, type 2, 230 V	Α	50000
Number of auxiliary contacts as normally closed contact 0  Ambient temperature, upper operating limit °C 60	Rated conditional short-circuit current, type 2, 400 V	Α	50000
Ambient temperature, upper operating limit °C 60	Number of auxiliary contacts as normally open contact		1
	Number of auxiliary contacts as normally closed contact		0
Temperature compensated overload protection Yes	Ambient temperature, upper operating limit	°C	60
Tomporation compensation protection	Temperature compensated overload protection		Yes

		01.100.40
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	mm	45
Height	mm	180
Depth	mm	95

# Approvals

Product Standards	IEC/EN 60947-4-1; UL 60947-4-1; CSA - C22.2 No. 60947-4-1-14; CE marking
UL File No.	E36332
UL Category Control No.	NLRV
CSA File No.	12528
CSA Class No.	3211-24
North America Certification	UL listed, CSA certified
Specially designed for North America	No

# **Dimensions 67 mm** (2.64") 180 mm (7.09") 95 mm (3.74")

**Assets (links)** 

MSC-D-...-M7[...15]...

**Declaration of CE Conformity** 00002885

**Instruction Leaflets** 

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