

DOL starter, 3p, 0.55-1.5kW/400V/AC3, 100kA, protection electronic, SmartWire-DT

Part no. Article no. Catalog No. MSC-DEA-4-M7(24VDC) 121754 XTSEA004B007BTDNL



#### **Delivery program**

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			with PKE-SWD-32 for connecting the motor-starter combination
Motor ratings			
Motor rating			
AC-3			
380 V 400 V 415 V	Р	kW	1.5
Rated operational current			
AC-3			
400 V	l <sub>e</sub>	A	3.6
Rated short-circuit current 380 - 400 V	Ι <sub>q</sub>	kA	100
Setting range			
Setting range of overload releases	l <sub>r</sub>	A	1 - 4
「 中			
Short-circuit releases			
Non-delayed	I <sub>rm</sub>	A	186
Coordination			Type of coordination "1"
Contact sequence			

		24.17.20
Actuating voltage		24 V DC
		DC Voltage
Motor-protective circuit-breakers PKE12/XTUA-4		
Contactor DILM7-01()		
DOL starter wiring set Mechanical connection element and electrical electric contact module PKZM0-XDM32		
Notes		
The DOL starter (complete devices) consists 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.		

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

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.

MSC-DEA... DOL starters are prepared for communications via SmartWire-DT. In order to be used this way, they first need to be expanded with the PKE-SWD-32 communications module.

Motor output/rated motor current Motor rating	Rated motor current AC-3 220 V	380 V	415 V
	230 V	400 V	
	240 V		
	I <sub>q</sub> = 100 kA	I <sub>q</sub> =100 kA	$I_q = 50 \text{ kA}$
Р	Ľ	Ľ	Ľ
kW	А	А	Α
0.18	1.04	-	-
0.25	1.4	-	-
0.37	2	1.1	1.1
0.55	2.7	1.5	1.5
0.75	3.2	1.9	1.9
1.1	-	2.6	2.6
1.5	-	3.6	3.6

### **Technical data**

General			
Standards			IEC/EN 60947-4-1, VDE 0660
Main conducting paths			
Rated impulse withstand voltage	U <sub>imp</sub>	V AC	6000
Overvoltage category/pollution degree			111/3
Rated operational voltage	U <sub>e</sub>	V	230 - 415
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
380 V 400 V	le	А	4
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 contactors product group DILET timing relay, ETR, see contactors, electronic timing relays product group
Power consumption			
DC operated	Sealing	W	3

# Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	In	А	4
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0.3
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	0.9
Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	2.6
Heat dissipation capacity	P <sub>diss</sub>	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	55
EC/EN 61439 design verification			
10.2 Strength of materials and parts			

10.2.3.1 Verification of thermal stability of enclosures 10.2.3.2 Verification of resistance of insulating materials to normal heat	Meets the product standard's requirements. Meets the product standard's requirements.
Ŭ	
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 6.0**

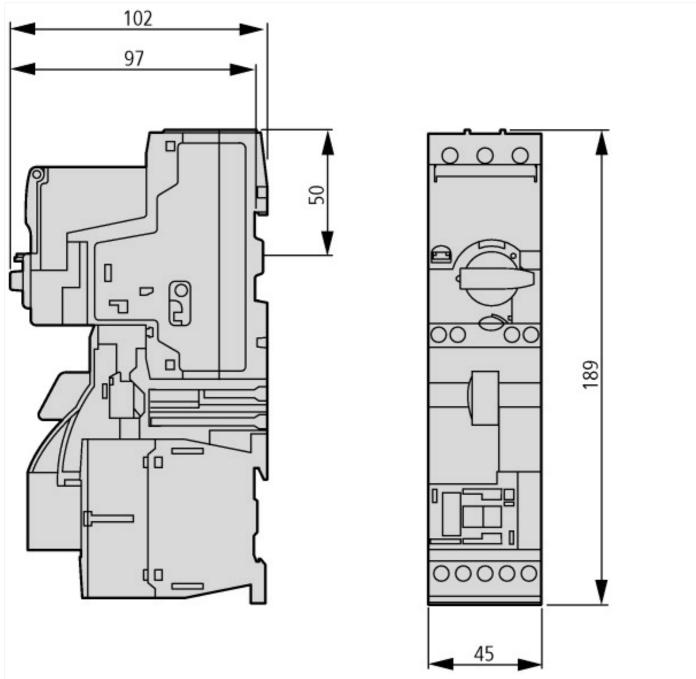
Low-voltage industrial components (EG000017) / Motor starter/Motor starter combination (EC001037)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Load breakout, motor breakout / Motor starter combination (ecl@ss8.1-27-37-09-05 [AJZ718010])

Kind of motor starter     Direct starter       With short-circuit release     Yes       Rated control supply voltage Us at AC 50HZ     0       Rated control supply voltage Us at AC 50HZ     V       Rated control supply voltage Us at AC 60HZ     V       Rated control supply voltage Us at AC 60HZ     V       Rated control supply voltage Us at AC 60HZ     V       Rated control supply voltage Us at AC 60HZ     V       Rated control supply voltage Us at AC 60HZ     V       Rated control supply voltage Us at AC 60HZ     V       Rated control supply voltage Us at AC 60HZ     V       Rated operation power at AC-3, 200 V     V       Rated operation power at AC-3, 400 V     KW       Rated operation current at AC-3, 400 V     A       Rated operation current at AC-3, 400 V     A       Rated operation current at AC-3, 400 V/A17V     A       Rated conditional short-circuit current, type 1, 400 V/277V     A       Rated conditional short-circuit current, type 2, 200 V     A       Rated conditional short-circuit current, type 2, 400 V     A       Number of auxiliary contacts as normally coles contact     A       Number of auxiliary contacts as normally coles con			
Rated control supply voltage Us at AC 50HZ     I     I       Rated control supply voltage Us at AC 60HZ     V     0       Rated control supply voltage Us at AC 60HZ     V     24-24       Voltage type for actuating     DC     DC       Rated operation power at AC-3, 230 V, 3-phase     KW     0.5       Rated operation power at AC-3, 400 V     KW     0       Rated operation current ta     KW     0       Norderad release current setting     KW     0       Rated operation current ta     K     0       Rated conditional short-circuit current, type 1,480 V/277 V     K     0       Rated conditional short-circuit current, type 2,200 V     K     0       Rated conditional short-circuit current, type 2,400 V     K     0       Number of auxilia	Kind of motor starter		Direct starter
Rated control supply voltage Us at AC 60HZ     I     I       Rated control supply voltage Us at DC     V     24-24       Voltage type for actuating     D     D       Rated operation power at AC-3, 230 V, 3-phase     KW     0       Rated operation power at AC-3, 400 V     KW     1.5       Rated operation power at AC-3, 400 V     KW     0       Rated operation current te     KW     0       Rated operation current type 1,400 V/277 V     KM     0       Rated contrinuit short-circuit current, type 1,400 V/277 V     KM     0       Rated conditional short-circuit current, type 2,200 V     KM     0       Number of auxiliary contacts as normally closed contact     KM     0       Number of auxiliary contacts as normally closed contact     KM     0       Rated conection of main circuit     YM     Seconcection       Rated controls contaction frain circuit     KM	With short-circuit release		Yes
Rated control supply voltage Us at DC     4-24       Voltage type for actuating     C       Rated coperation power at AC-3, 200 V, 3-phase     KW     75       Rated operation power at AC-3, 400 V     KW     1.5       Rated operation power at AC-3, 400 V     KW     0       Rated operation power at AC-3, 400 V     KW     0       Rated operation current type At AC-3, 400 V     KW     0       Rated operation current type At AC-3, 400 V     KW     0       Rated operation current type At AC-3, 400 V     KW     0       Rated operation current type At AC-3, 400 V     KW     0       Rated operation current type At AC-3, 400 V     K     4       Overload release current setting     K     A       Rated operation current type At ACO V/277 V     K     A       Rated conditional short-circuit current, type 1, 400 V/277 V     K     A       Rated conditional short-circuit current, type 2, 400 V     A     A       Number of auxiliary contacts as normally closed cotact     A     A       Anbient temperature, upper operating limit     K     A       Rated controlino and circuit     Y	Rated control supply voltage Us at AC 50HZ	V	0 - 0
Number of auxiliary     C       Reted operation power at AC-3, 200 V, 3-phase     KW     0.5       Reted operation power at AC-3, 400 V     KW     1.5       Reted operation power at AC-3, 400 V     KW     0.0       Reted operation power at AC-3, 400 V     KW     0.0       Reted operation current 1     KM     0.0       Reted operation current 4AC-3,400 V     KM     0.0       Overload release current setting     KM     0.0       Reted conditional short-circuit current, type 1,600 Y/347 V     KM     0.0       Reted conditional short-circuit current, type 2,200 V     KM     0.0       Number of auxiliary contacts as normally closed contact     KM     0.0       Number of auxiliary contacts as normally closed contact     KM     0.0       Release class     C     Serew connection       Relea	Rated control supply voltage Us at AC 60HZ	V	0 - 0
Rated operation power at AC-3, 230 V, 3-phase     KW     075       Rated operation power at AC-3, 240 V     KW     15       Rated operation power at AC-3, 400 V     KW     0       Rated operation power at AC-3, 400 V     KW     0       Rated operation power at AC-3, 400 V     KW     0       Rated operation current le     KW     0       Rated operation current setting     KW     0       Rated operation current type 1, 480 Y/277 V     KM     0       Rated conditional short-circuit current, type 2, 230 V     KM     0       Rated conditional short-circuit current, type 2, 400 V     KM     0       Number of auxiliary contacts as normally closed contact     KM     0       Release class     KM     0     1       Release class     KM     CLASS 10     KM <t< td=""><td>Rated control supply voltage Us at DC</td><td>V</td><td>24 - 24</td></t<>	Rated control supply voltage Us at DC	V	24 - 24
Rated operation power at AC-3, 400 V     KW     5.       Rated power, 460 V, 60 H2, 3-phase     KW     0       Rated power, 575 V, 60 H2, 3-phase     KW     0       Rated power, 575 V, 60 H2, 3-phase     KW     0       Rated power, 575 V, 60 H2, 3-phase     KW     0       Rated operation current I     A     3.6       Rated operation current AC-3, 400 V     A     0       Overload release 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 1,480 Y/277 V     A     0       Rated conditional short-circuit current, type 2,230 V     A     0       Number of auxiliary contacts as normally open contact     A     0       Number of auxiliary contacts as normally cosed contact     A     0       Number of auxiliary contacts as normally cosed contact     F     0       Release class     C     A     0       Release class     C     C     S       Ruber of auxiliary contaction of main circuit     C     C     S       Rube	Voltage type for actuating		DC
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 operation current le     A     36       Rated operation current at AC-3, 400 V     A     4       Overload release current setting     A     1       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     A     0       Number of auxiliary contacts as normally closed contact     F     0     0       Number of auxiliary contacts as normally closed contact     F     0     0       Release class     F     6     F     0       Release class     CLSS 10     Currenction     Circuit connection       Release class     F     F     Serve connection     Serve connection	Rated operation power at AC-3, 230 V, 3-phase	kW	0.75
Rated power, 575 V, 60 Hz, 3-phase   KW   0     Rated power, 575 V, 60 Hz, 3-phase   KW   36     Rated operation current le   A   36     Rated operation current at AC-3, 400 V   A   4     Overload release current setting   A   1-4     Rated conditional short-circuit 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 1, 600 V/347 V   A   0     Rated conditional short-circuit current, type 2, 230 V   A   0     Number of auxiliary contacts as normally copen contact   A   0     Number of auxiliary contacts as normally closed contact   A   0     Release class   C   A   0     Release class   C   A   0     Type of electrical connection of main circuit   A   0   0     Type of electrical connection of main circuit   C   A   0     Type of electrical connection for auxiliary- and control current circuit   C   A   0     Right multing possible   C   C   C   C   C	Rated operation power at AC-3, 400 V	kW	1.5
Rated operation current le   A   3.6     Rated operation current at AC-3, 400 V   A   4     Overload release current setting   A   1.4     Rated conditional short-circuit 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, 200 V   A   0     Rated conditional short-circuit current, type 2, 200 V   A   0     Number of auxiliary contacts as normally open contact   A   0     Number of auxiliary contacts as normally closed contact   A   0     Release class   F   0   0     Temperature compensated overload protection   F   0   0     Type of electrical connection of main circuit   F   6   0     Type of electrical connection for auxiliary- and control current circuit   F   F   0     Type of electrical connection for auxiliary- and control current circuit   F   F   0     Type of electrical connection for auxiliary- and control current circuit   F   F   0     Type of electrical connection for auxiliary- and control current circuit   F   F   0 </td <td>Rated power, 460 V, 60 Hz, 3-phase</td> <td>kW</td> <td>0</td>	Rated power, 460 V, 60 Hz, 3-phase	kW	0
Rate operation current at AC-3, 400 V   A   A     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   D     Rated conditional short-circuit current, type 2, 400 V   A   D     Number of auxiliary contacts as normally open contact   A   D     Number of auxiliary contacts as normally closed contact   A   D     Ratea conditional short-circuit current, type 2, 200 V   A   D     Number of auxiliary contacts as normally open contact   A   D     Number of auxiliary contacts as normally closed contact   A   D     Ratea conditional short-circuit urrent, upper operating limit   F   D     Release class   C   D   S     Type of electrical connection of main circuit   C   S   S     Type of electrical connection for auxiliary- and control current circuit   S   Serw connection     Type of electrical connection for auxiliary- and control current circuit   S   Serw connection     Type of electrical	Rated power, 575 V, 60 Hz, 3-phase	kW	0
Overload release current setting     A     A       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     A     0       Number of auxiliary contacts as normally closed contact     F     0       Ambient temperature, upper operating limit     F     6       Release class     CatSS 10     F       Type of electrical connection of main circuit     F     6       Type of electrical connection of main circuit     F     F       Rid mounting possible     F     F     F	Rated operation current le	А	3.6
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   A   0     Number of auxiliary contacts as normally closed contact   F   0     Ambient temperature, upper operating limit   F   0     Release class   F   0     Type of electrical connection of main circuit   F   6     Type of electrical connection for auxiliary- and control current circuit   F   F     Rig mounting possible   F   Screw connection	Rated operation current at AC-3, 400 V	А	4
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 A 0   Number of auxiliary contacts as normally closed contact F 0   Ambient temperature, upper operating limit C 0   Release class F 0   Type of electrical connection of main circuit F 6   Type of electrical connection for auxiliary- and control current circuit F C   Rate double F Carew connection   Type of electrical connection for auxiliary- and control current circuit F Screw connection   Rate and montting possible F Screw connection	Overload release current setting	А	1 - 4
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   M   0     Number of auxiliary contacts as normally closed contact   I   0     Ambient temperature, upper operating limit   P   6     Temperature compensated overload protection   Yes   CLASS 10     Type of electrical connection of main circuit   Screw connection   Screw connection     Type of electrical connection for auxiliary- and control current circuit   Yes   Screw connection     Rail mounting possible   I   Screw connection	Rated conditional short-circuit current, type 1, 480 Y/277 V	А	0
Rated conditional short-circuit current, type 2, 400 V   A   0     Number of auxiliary contacts as normally open contact   G   0     Number of auxiliary contacts as normally closed contact   M   0     Ambient temperature, upper operating limit   M   0     Temperature compensated overload protection   M   60     Release class   Variant control current circuit   Variant contection     Type of electrical connection of main circuit   M   Screw connection     Type of electrical connection for auxiliary- and control current circuit   Screw connection     Rail mounting possible   M   Seree Connection	Rated conditional short-circuit current, type 1, 600 Y/347 V	А	0
Number of auxiliary contacts as normally open contact   0     Number of auxiliary contacts as normally closed contact   1     Ambient temperature, upper operating limit   °C   60     Temperature compensated overload protection   °C   60     Release class   CLASS 10   CLASS 10     Type of electrical connection for auxiliary- and control current circuit   Screw connection   Screw connection     Rail mounting possible   Cole and an anti-activities   Screw connection   Screw connection	Rated conditional short-circuit current, type 2, 230 V	А	0
Number of auxiliary contacts as normally closed contactIAmbient temperature, upper operating limit°C60Temperature compensated overload protectionYesRelease classCLASS 10Type of electrical connection for auxiliary- and control current circuitScrew connectionType of suble contact of for auxiliary and control current circuitScrew connectionRail mounting possibleScrew connection	Rated conditional short-circuit current, type 2, 400 V	А	0
Ambient temperature, upper operating limit   PC   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   Screw connection	Number of auxiliary contacts as normally open contact		0
Temperature compensated overload protectionYesRelease classCLASS 10Type of electrical connection of main circuitScrew connectionType of electrical connection for auxiliary- and control current circuitScrew connectionRail mounting possibleScrew connection	Number of auxiliary contacts as normally closed contact		1
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	Ambient temperature, , upper operating limit	°C	60
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	Temperature compensated overload protection		Yes
Type of electrical connection for auxiliary- and control current circuit Screw connection   Rail mounting possible Yes	Release class		CLASS 10
Rail mounting possible Yes	Type of electrical connection of main circuit		Screw connection
	Type of electrical connection for auxiliary- and control current circuit		Screw connection
Degree of protection (IP) IP20	Rail mounting possible		Yes
	Degree of protection (IP)		IP20

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	Yes

# **Dimensions**



## **Additional product information (links)**

#### IL034014ZU (IL03402005Z) Direct-on-line starter up to 15 A

IL034014ZU (IL03402005Z) Direct-on-line starter ftp://ftp.moeller.net/DOCUMENTATION/AWA\_INSTRUCTIONS/IL034014ZU2013\_11.pdf up to 15 A

Moeller\_Online Selections Aids

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