DATASHEET - EMS2-D0-T-9-SWD



DOL starter, 24 V DC, 1,5 - 7 (AC-53a), 9 (AC-51) A, Push in terminals, SmartWire-DT slave

Part no. EMS2-D0-T-9-SWD Catalog No. 192387
Alternate Catalog EMS2-D0-T-9-SWD

No.





Delivery program

Product range Electronic motor starter Subrange SmartWire-DT slave Basic function DUstarters (complete devices) Function For connecting to SmartWire-DT for expanded diagnostics Description DUStarters (complete devices) Messages DUSTATION (motor particul design; safety output stage with bypass, three-phase disconnect. Motor current additionally adjustable via SmartWire-DT. Messages Operating direction feedback Motor current in % M	Delivery program			
Subrange Basic function Function Description Description Messages More a substance of the substance of	Product range			Electronic motor starter
Basic function Function Description Description Motor retrings Max rating for three-phase motors, 50 - 60 Hz AC-53a 380 V 400 V 415 V Setting range of overload releases Letting range of overload releases Actuating voltage Connection technique DoL starting Motor protection Circuit designs safety output stage with bypass, three-phase disconnect. Motor current additionally adjustable via SmartWire-DT. Operating direction feedback Motor current in % Motor retring in % Overload prewarning Trip indications (overload, phase failure, etc.) Set short-release value Device Type Operating the motor starter Manual reset Automatic reset Automatic reset Actualing for three-phase motors, 50 - 60 Hz AC-53a 380 V 400 V 415 V P W O.55 - 3 Setting range of overload releases Letting range of overload releases	Product range			SmartWire-DT slave
Function Description Descript	Subrange			SmartWire-DT electronic motor starters
Description DOL starting Motor protection Circuit design: safety output stage with bypass, three-phase disconnect. Motor current additionally adjustable via SmartWire-DT. Messages Operating direction feedback Motor current in % Motor indications (overload, phase failure, etc.) Set short-circuit release value Device Pype Commands Motor ratings Max. rating for three-phase motors, 50 - 60 Hz AC-53a 380 V 400 V 415 V P kW 0.55 - 3 Setting range of overload releases Ir A_X 1.5 - 7 (AC-53a) 1.5 - 9 (AC-51) Actuating voltage Connection technique DOL starting Motor protection circuit stage with bypass, three-phase disconnect. Motor current in % M	Basic function			DOL starters (complete devices)
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Motor ratings Max. rating for three-phase motors, 50 - 60 Hz AC-53a 380 V 400 V 415 V P kW 0.55 - 3 Setting range of overload releases Ir A_x 1,5 - 7 (AC-53a) 1,5 - 9 (AC-51) Actuating voltage Connection technique Push in terminals	Messages			Operating direction feedback Motor current in % Motor current in A Thermal motor image in % Overload prewarning Trip indications (overload, phase failure, etc.) Set short-circuit release value
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380 V 400 V 415 V P kW 0.55 - 3 Setting range of overload releases Ir A_x 1,5 - 7 (AC-53a) 1,5 - 9 (AC-51) Actuating voltage Connection technique Push in terminals	Max. rating for three-phase motors, 50 - 60 Hz			
Setting range of overload releases I _r A_x 1,5 - 7 (AC-53a) 1,5 - 9 (AC-51) Actuating voltage 24 V DC Connection technique Push in terminals	AC-53a			
Actuating voltage 24 V DC Connection technique Push in terminals	380 V 400 V 415 V	P	kW	0.55 - 3
Connection technique Push in terminals	Setting range of overload releases	l _r	A_x	
	Actuating voltage			24 V DC
Connection to SmartWire-DT yes	Connection technique			Push in terminals
	Connection to SmartWire-DT			yes

Technical data

General

delicial		
Standards		IEC/EN 60947-4-2 UL508
Ambient temperature		
Storage	°C	
Min. ambient temperature, storage	°C	- 40
Ambient temperature, storage max.	°C	+ 80
Open	°C	
Operating ambient temperature min.	°C	-5
Operating ambient temperature max.	°C	+ 55
Weight	kg	0.22
Mounting		Top-hat rail IEC/EN 60715, 35 mm
Protection type (IEC/EN 60529, EN50178, VBG 4)		IP20
Mounting position		Vertical Motor feeder at bottom
Terminal capacity		
Push-in terminals		

		mm^2	0.2 - 2.5
		AWG	24 - 14
Main conducting paths			
Rated operational voltage	U _e	V AC	500
Operational voltage range		V	
Operating voltage range min.		V	42
Operating voltage range max.		V	550
Rated operational current			
AC-51	I _e	Α	9
AC-53a	I _e	Α	7
			AC-53a: Please note possible derating.
Setting range of overload releases	I _r	A_x	1,5 - 7 (AC-53a) 1,5 - 9 (AC-51)
Release class		CLASS	10A
Heat dissipation	P_{V}	W	1 - 12
Control section			
Rated control voltage	U_s	V DC	24
Control voltage range		V	19,2 - 30 V DC
Residual ripple on the input voltage		%	≦5
Rated control current	Is	mA	60
Current draw inrush		mA	120
Actuating circuit (ON, L, R)			
Rated actuation voltage	U _c	V	24
Switching level "Low"		V	-3 - +9.6 V DC
Switching level "confirm Off"		V	< 5 V DC
Switching level "High"		V	19.2 - 30 V DC
Rated actuating current	Ic	mA	7
Electromagnetic compatibility (EMC)			

Design verification as per IEC/EN 61439

Radio interference suppression

Design vernication as per iec/en 01459			
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
Equipment heat dissipation, current-dependent	P _{vid}	W	12
Static heat dissipation, non-current-dependent	P _{vs}	W	2
Heat dissipation capacity	P _{diss}	W	0
Operating ambient temperature min.		°C	-5
Operating ambient temperature max.		°C	55
			If necessary, Allow for derating
EC/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.

EN 55011 EN 61000-6-3, Class A (emitted interference, radiated)

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])

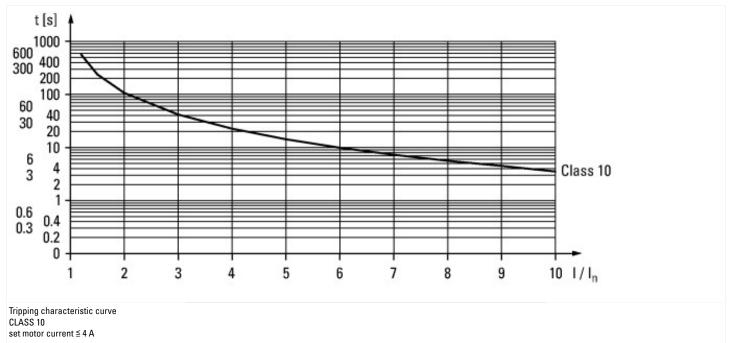
Kind on for starter Direct starter With short-circuit release No Rated control supply voltage Us at AC 58HZ V 0-0 Rated control supply voltage Us at AC 58HZ V 0-0 Rated control supply voltage Us at DC V 2-24 Voltage type for actuating LW 15 Rated operation power at AC-3, 290 V, 3-phase kW 15 Rated operation power at AC-3, 480 V W 0 Rated operation current at AC-3, 480 V W 0 Rated operation current at AC-3, 480 V W 0 Rated operation current at AC-3, 480 V W 0 Rated operation current at AC-3, 480 V W 0 Rated operation current at AC-3, 480 V W 0 Rated operation current at AC-3, 480 V A 0 Rated operation current at AC-3, 480 V A 0 Rated operation current at AC-3, 480 V A 0 Rated operation power at AC-3, 480 V A 0 Rated operation power at AC-3, 480 V A 0 Rated operation power at AC-3, 480 V<	
Rated control supply voltage Us at AC 50HZ V 0 - 0 Rated control supply voltage Us at AC 60HZ V 0 - 0 Rated control supply voltage Us at DC V 24 - 24 Voltage type for actuating EXP 25 - 20 Rated operation power at AC-3, 230 V.3-phase kW 1.5 Rated power, 480 V.60 Hz, 3-phase kW 0 Rated power, 48	
Rated control supply voltage Us at AC 60HZ V 0 - 0 Rated control supply voltage Us at DC V 24 - 24 Voltage type for actuating DC Rated operation power at AC-3, 230 V, 3-phase kW 15 Rated operation power at AC-3, 400 V kW 3 Rated power, 460 V, 60 Hz, 3-phase kW 0 Rated operation current le A 9 Rated operation current at AC-3, 400 V A 6.5 Overload release current setting A 1.5 - 9 Rated conditional short-circuit current, type 1, 480 Y/277 V A 0 Rated conditional short-circuit current, type 1, 500 Y/34 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 V 4 Number of auxiliary contacts as normally closed contact Yes Release class CLASS 10 Spring clamp connection Type of electrical connection of main circuit Spring clamp connection With transformer <td></td>	
Rated control supply voltage Us at DC V 24 - 24 Voltage type for actuating DC Rated operation power at AC-3, 230 V, 3-phase kW 1.5 Rated operation power at AC-3, 400 V kW 3 Rated power, 480 V, 60 Hz, 3-phase kW 0 Rated power, 575 V, 60 Hz, 3-phase kW 0 Rated operation current at AC-3, 400 V A 6.5 Rated operation current at AC-3, 400 V A 6.5 Rated operation current at AC-3, 400 V A 6.5 Overload release current setting A 1.5 - 9 Rated operation 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 Rated combinal short-circuit current of auxiliary contacts as normally closed contact C 40 Ambient temperature compensated overload protection C Ves CLASS 10 Temperature compensated overload protection C CL	
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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 operation current le 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 Overload release 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, 240 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 Paperature 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	
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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 Rated conditional short-circuit current, type 2, 400 V A 0 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 40 Temperature compensated overload protection Yes Release class CLASS 10 Type of electrical connection of main circuit Spring clamp connection Spring clamp connection Spring clamp connection Spring clamp connection Pail mounting possible Yes With transformer Number of command positions Suitable for emergency stop Coordination class according to IEC 60947-4-3	
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With transformer Number of command positions Suitable for emergency stop Coordination class according to IEC 60947-4-3	
Number of command positions Suitable for emergency stop Coordination class according to IEC 60947-4-3	
Suitable for emergency stop Coordination class according to IEC 60947-4-3	
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 No	
Supporting protocol for PROFIBUS No	
Supporting protocol for CAN No	
Supporting protocol for INTERBUS No	

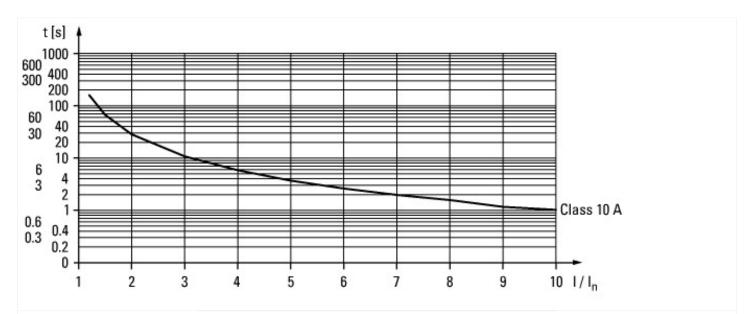
	N.
	No
	Yes
mm	
mm	
mm	
	mm

Approvals

Product Standards	UL 60947-4-1; CSA C22.2 No. 60947-4-1-14; CE marking
UL File No.	E338590
UL Category Control No.	NLDX, NLDX7
CSA File No.	UL report applies to both US and Canada
North America Certification	UL listed, certified by UL for use in Canada
Specially designed for North America	No

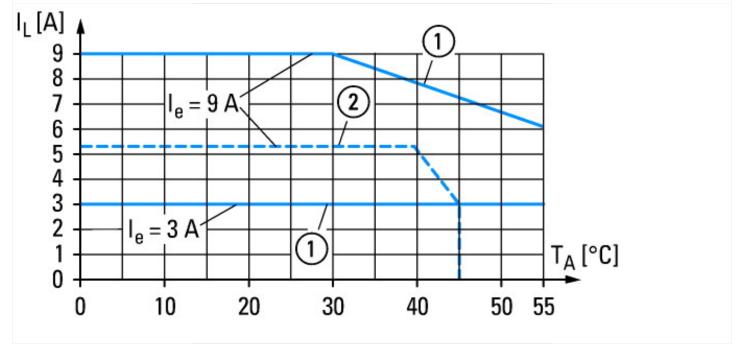
Characteristics





Tripping characteristic curve CLASS 10A set motor current > 4 A

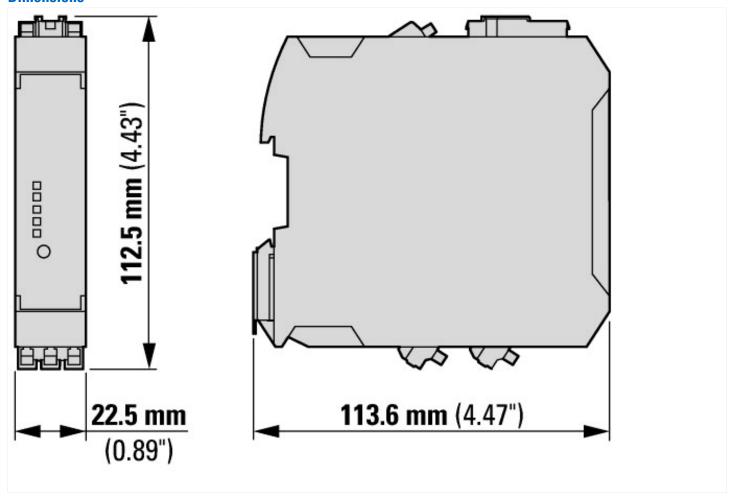




- Current derating

 ① For devices installed with a minimum clearance of 20 mm
 ② For devices in direct sequence

Dimensions



Additional product information (links)

MN120008 EMS2-...-SWD Electronic

Motorstarter with SWD - English

Production production of the control		
IL120004ZU Electronic motor starter EMS2 with	th SWD	
IL120004ZU Electronic motor starter EMS2 wit SWD	h ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL120004ZU2019_07.pdf	
MN120008 EMS2SWD Electronic Motorsta	inter with SWD	
MN120008 EMS2SWD Elektronischer Motorstarter mit SWD - Deutsch	ftp://ftp.moeller.net/D0CUMENTATION/AWB_MANUALS/MN120008DE.pdf	

ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN120008EN.pdf