



DOL starter 2.4A

Part no.
Article no.

EMS-DO-T-2,4-24VDC
170099




Powering Business Worldwide™

Catalog No.

EMS-DO-T-2P4-24VDC

Delivery programme

Product range			Electronic motor starter
Basic function			DOL starters (complete devices)
Description			DOL starting Motor protection Circuit design: safety output stage with bypass, three-phase disconnect.
Conformity, Approval			
Explosion protection (according to ATEX 94/9/EC)			II (2) G [Ex e] [Ex d] [Ex px] II (2) D [Ex t] [Ex p]
EC-prototype test certification			PTB 13 ATEX 3003
Motor ratings			
Max. rating for three-phase motors, 50 - 60 Hz			
AC-53a			
380 V 400 V 415 V	P	kW	0.06 - 0.75
Setting range of overload releases	I _r	A _x	0,18 - 2,4
			
Actuating voltage			24 V DC
Connection technique			Push in terminals
Connection to SmartWire-DT			no








Approvals

Product Standards
UL File No.
UL Category Control No.
CSA File No.
North America Certification
Specially designed for North America

IEC/EN 60947-5; UL 508; CSA-C22.2 No. 14; CE marking
E29096
NLDX, NLDX7
UL report applies to both US and Canada
UL listed, certified by UL for use in Canada
No

General

Standards			IEN/EN 60947-4-2 UL508
Dimensions			
Width		mm	30
Height		mm	157
Depth		mm	123.5
Weight		kg	0.3
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
Lifespan, electrical	Operations		3 x 10 ⁷
Max. switching frequency		Operations/h	200 (pulse pause time 50:50)
Terminal capacity			
Solid		mm ²	1 x (0,75 - 2,5) 1 x AWG20 - 14
flexible, with ferrule		mm ²	2 x (0,75 - 2,5) 1 x AWG20 - 14
Notes			Minimum length 10 mm.
flexible, with twin ferrule		mm ²	2 x (0,75 - 1,5) 2 x AWG20 - 16

Notes			Minimum length 10 mm.
Climatic environmental conditions			
Operating ambient temperature		°C	-25 - +60, in accordance with IEC 60068-2-1
Condensation			Take appropriate measures to prevent condensation
Storage	θ	°C	-40 - +80
Main conducting paths			
Rated impulse withstand voltage	U_{imp}	V AC	6000
Overvoltage category/pollution degree			III/2
Rated operational voltage	U_e	V	42 - 550
Rated operational current			
AC-51	I_e	A	0.15 - 2.40
AC-53a	I_e	A	0.15 - 2.4
Heat dissipation	P_V	W	1.1 - 3.3
Basic insulation to IEC/EN60947-1			
Between supply, control, and switching voltages		V AC	500
between feedback signal output and switch voltage		V AC	500
Safe isolation to IEC/EN60947-1			
Between supply, control, and switching voltages		V AC	 300
between feedback signal output and switch voltage		V AC	 300
Safe isolation to EN 50178			
Between supply, control, and switching voltages		V AC	500
between feedback signal output and switch voltage		V AC	500
Current measurement			
Setting range of overload releases	I_r	A_x	0,18 - 2,4
Release class		CLASS	10
Recovery time	t_W	min.	2 (manual startup) 20 (automatic restart)
Balance monitoring			
Magnitude $I_{max} > I_{rated} ((I_{max} - I_{min})/I_{max})$		%	bei  33, Ansprechzeit 120 s bei  67, Ansprechzeit 1,8 s
Magnitude $I_{max} < I_{rated} ((I_{max} - I_{min})/I_{rated})$		%	bei  33, Ansprechzeit 120 s bei  67, Ansprechzeit 1,8 s
Short-circuit rating			
Type "1" coordination			
Short-circuit protective device			50 kA, 500 V AC: Fuse 16 A gG/gL 50 kA, 415 V AC: PKM0-4 15 kA, 415 V AC: PKM0-6,3
Control section			
Input data			
Supply voltage	U_{AUX}	V DC	A1 - A2: 24 (-20 - +25 %)
Residual ripple on the input voltage		%	 5
Input current		mA	40
Note on input current			without feedback signal
Actuating circuit (ON, L, R)			
Switching level "Low"		V DC	-3 - +9.6
Switching level "confirm Off"		V DC	< 5
Switching level "High"		V DC	19.2 - 30
Input current		mA	5
Feedback outputs			

Notes			Contacts 95, 96 or 98
Contacts			
CO = changeover			1 CO
Rated operational voltage	U_e	V AC/ DC	250
Rated operational current			
AC-15			
230 V	I_e	A	3
DC-13			
24 V	I_e	A	2

Electromagnetic compatibility (EMC)

Electrostatic discharge (ESD)			
applied standard			IEC EN 61000-4-2, Level 3
Air discharge		kV	8
Contact discharge		kV	6
Electromagnetic fields (RFI)			
applied standard			IEC EN 61000-4-3
		V/m	800 - 1000 mHz: 10 1.4 - 2 GHz: 10 2.0 - 2.7 GHz: 3
Radio interference suppression			EN 55011, Class A (emitted interference, line-conducted) EN 61000-6-3, Class A (emitted interference, radiated)
Note on use			This product is designed for operation in industrial environments (environment 2). The use in residential environments (environment 1) could cause electrical interference so that addition suppression must be planned.
Burst		kV	2 IEC/EN 61000-4-4, level 3
power pulses (Surge)			1 kV (symmetrical) 2 (asymmetrical) according to IEC/EN 61000-4-5
Immunity to line-conducted interference to (IEC/EN 61000-4-6)		V	10

Technical safety parameters:

Notes			motor protection
Ambient temperature		°C	40
Values according to EN ISO 13849-1			
MTTFd	Years		316
Values according to IEC 62061			
			λ_{sd} [FIT]: 0 λ_{su} [FIT]: 1550 λ_{dd} [FIT]: 314 λ_{du} [FIT]: 47,2 SFF [%]: 97,9 DC [%]: 86,9 SIL: 2

Technical data ETIM 5.0

Low-voltage industrial components (EG000017) / Motor starter combination (EC001037)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Load breakout, motor breakout / Motor starter combination (ecl@ss8-27-37-09-05 [AJZ718009])			
Function			Direct starter
Rated control supply voltage U_s at AC 50HZ		V	0 - 0
Rated control supply voltage U_s at AC 60HZ		V	0 - 0
Rated control supply voltage U_s at DC		V	24 - 24
Voltage type for actuating			DC
Rated operation power at AC-3, 400 V		kW	0.75
Rated operation current I_e		A	2.4
Conditioned rated short-circuit current I_q		kA	50
Setting range overload protector		A	0.18 - 2.4
With short-circuit release			No
Type of coordination			1
Connection type main current circuit			Spring clamp connection

Degree of protection (IP)

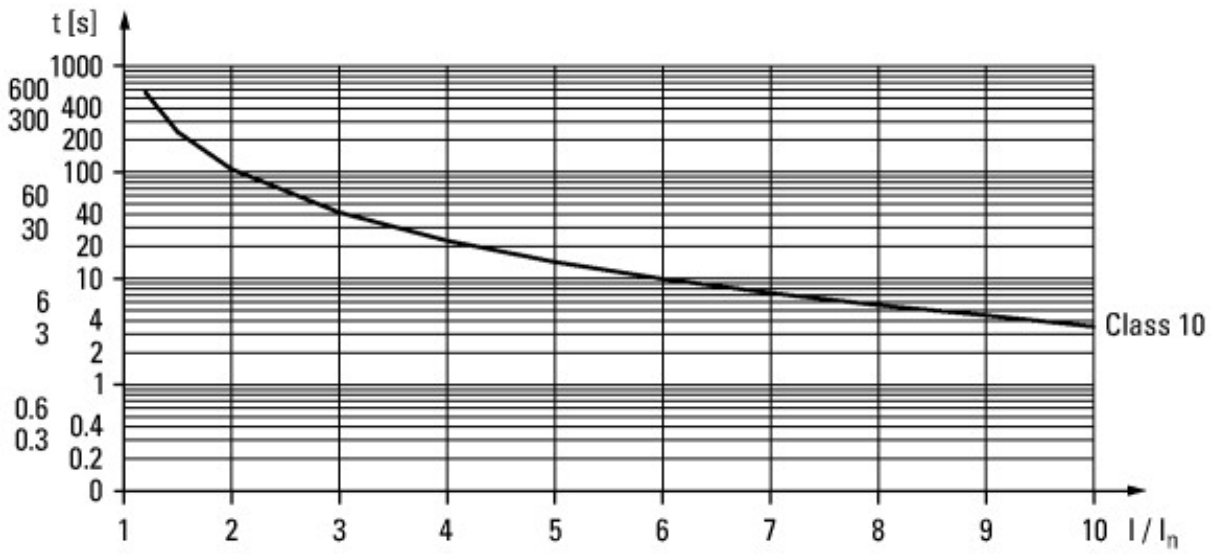
IP20

Suited for bus connection

No

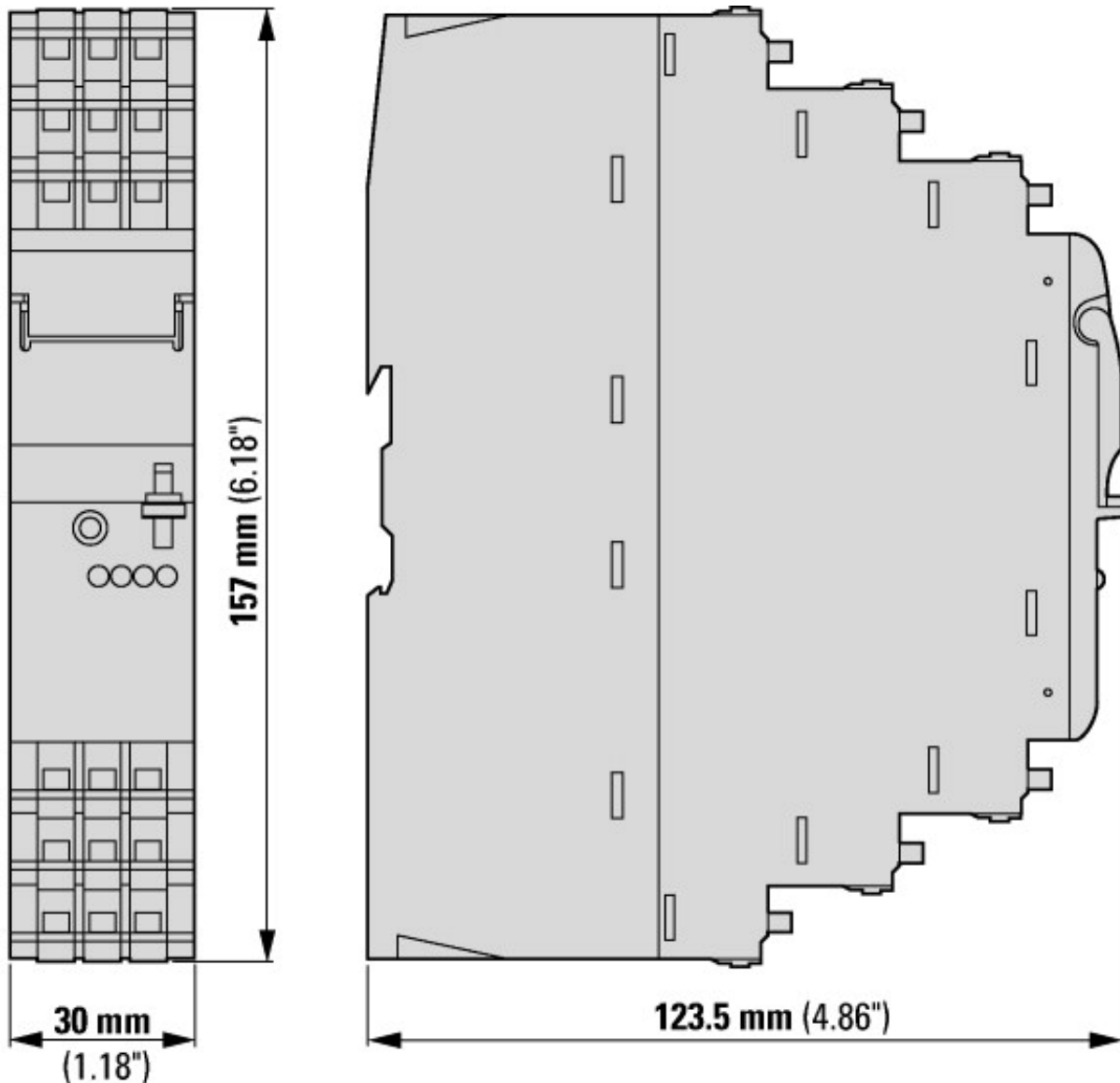
Characteristics

Characteristic curves



Tripping characteristics
CLASS 10

Dimensions



Additional product information (links)

IL03407198Z Electronic motor starter EMS	
IL03407198Z Electronic motor starter EMS	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407198Z2014_02.pdf
MN03407009Z-DE/EN Electronic motor starter EMS	
MN03407009Z-DE/EN Electronic motor starter EMS - Deutsch / English	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN03407009Z_DE_EN.pdf
EMS product information, engineering notes	http://www.moeller.net/binary/w_brochures/br034001en.pdf