DATASHEET - DS7-340SX009N0-L



Soft starter, 9 A, 200 - 480 V AC, 24 V AC/DC, Frame size FS1, Ambient temperature Operation -40 - +40 $^{\circ}\text{C}$



Part no. DS7-340SX009N0-L

Catalog No. 171742

Alternate Catalog

DS7-340SX009N0-L

No.

EL-Nummer 4110406

(Norway)

Delivery program

Donvory program			
Description			With internal bypass contacts
Function			Soft starters for three-phase loads
Mains supply voltage (50/60 Hz)	U_{LN}	V AC	200 - 480
Supply voltage	U_s		24 V AC/DC
Control voltage	U _C		24 V AC 24 V DC
Assigned motor rating (Standard connection, In-Line)			
at 400 V, 50 Hz	Р	kW	4
at 460 V, 60 Hz	P	HP	5
Rated operational current			
AC-53	l _e	Α	9
Rated operational voltage	U _e		200 V 230 V 400 V 480 V
Connection to SmartWire-DT			no
Frame size			FS1

Technical data

General

General			
Standards			IEC/EN 60947-4-2 UL 508 CSA22.2-14
Approvals			CE
Approvals			UL CSA C-Tick UkrSEPRO
Climatic proofing			Damp heat, constant, to IEC 60068-2-3 Damp heat, cyclic, to IEC 60068-2-10 Cold to EN 60068-2-1
Ambient temperature			
Operation	9	°C	-40 - +40 up to 60 at 2% derating per Kelvin temperature rise
Storage	9	°C	-40 - +60
Altitude		m	0 - 1000 m, above that 1 $\%$ derating per 100 m , up to 2000 m
Mounting position			Vertical
Degree of protection			
Degree of Protection			IP20
Protection against direct contact			Finger- and back-of-hand proof
Overvoltage category/pollution degree			11/2
Shock resistance			8 g/11 ms
Vibration resistance to EN 60721-3-2			2M2
Radio interference level (IEC/EN 55011)			В
Static heat dissipation, non-current-dependent	P _{vs}	W	0.45
Weight		kg	0.44
Main conducting paths			
Rated operating voltage	U _e	V AC	200 - 480

Ratio operational connections, in Line A	Supply frequency	f_{LN}	Hz	50/60
Aboys and convector, in-line)				
Assigned motor aring (Standard correction, in Line)	·			0
STATE POS		I _e	A	
March 1972		D	LAAZ	22
### 1900 1901 1902				
stable No. 1987 (a) 1987 (b) 1987 (c) 1987				
Section Sect				
Overload cycle to IECE/19 000074-2 3 A.C. 538 - 3 - 575 - 10 A.C. 538 contacts A.C. 538 - 3 - 575 - 10 Short-offcruit citing PRAMD 10 (r.D. PAZD) Type - I' concrimation 3 x 170010027 Special contraction of additional with the fuses for coordination type _ 1' 2 x 170010027 3 x 170010027 Terminal cospecities 3 x 170010027 Cable inequits mm²				
AC Sise			""	
Stort - Control Lypass contacts				9 Δ· ΔC-53a· 3 - 5· 75 - 10
Stant - circuit raining				
PKM6-10 (* CL-PKZ0)				
Figue 2.** coordination (additional with the fuses for coordination type 2.**) Figue base founder x part no. 1 Figure 1.** coordination (additional with the fuses for coordination type 2.**) Figure 1.** (2.75 - 2.4) Figure				PKM0-10 (+ CL-PKZ0)
Terminal capacities				
Cable lengths				
Cable lengths	Fuse base (number x part no.)			3 x 170H1007
Solid with ferrule mm² 2 k (0.75 - 2.5) Flexible with ferrule mm² 2 k (0.75 - 2.5) Solid or stranded Mm 1 Tightening torque Mm 1 Screwdriver (PZ Posidriv) mm² PZ 2.1 x 6 mm Control cables mm² 1 k (0.75 - 4) Solid or stranded mm² 1 k (0.75 - 4) Solid or stranded mm² 1 k (0.75 - 4) Flexible with ferrule mm² 2 k (0.75 - 2.5) Flexible with ferrule mm² 2 k (0.75 - 2.5) Solid or stranded mm² 1 k (0.75 - 4) Solid or stranded mm	Terminal capacities			
Flexible with ferrule	Cable lengths			
Flexible with ferrule	Solid		mm^2	
Solid or stranded	Flayible with ferrule		2	
Name			mm	
Screwdriver (PZ- Pozidriv) mm PZZ; 1 × 6 mm Control cables mm² 1 × 10.75 - 41 2 × 10.75 - 25 3 × 10.75 - 25 3 × 10.75 - 25	Solid or stranded		AWG	18 - 10
Control cables Mm² 1x (0.75 - 4) 1x (0.75 - 25) Boxiled with farrule mm² 1x (0.75 - 25) 1x (0	Tightening torque		Nm	1.2
Solid mm² 1 x (0.75 - 4) 2 x (0.75 - 25) Solid or stranded	Screwdriver (PZ: Pozidriv)		mm	PZ2; 1 x 6 mm
Flexible with ferrule	Control cables			
Solid or stranded AWG 18 - 10 Tightening torque Nm 0.2 x 5.5 toward Screwdriver mm 0.8 x 5.5 toward Control circuit Urigital inputs Control voltage V DC 24 V DC + 10 % - 15 % DC -operated V DC 24 V DC + 10 % - 15 % Current consumption 24 V mA 1.6 External 24 V mA 1.6 Pick-up voltage v DC 17.3 - 27 DC operated v DC 17.3 - 27 DC operated v DC 0 - 3 DC operated v DC 0 - 3 AC operated v DC 0 - 3 Pick-up time v DC 0 - 3 DC operated v DC 0 - 3 AC operated v DC 0 - 3 Pick-up time v DC 0 - 3 DC operated v DC 0 - 3 AC operated v DC 0 - 3 DC operated v DC 0 - 3 DC operated v DC	Solid		mm ²	
Name 12 12 12 12 13 13 14 15 13 15 13 15 13 15 13 13	Flexible with ferrule		mm^2	
Control circuit mm 0.8 x 5.5 in x 6 Digital inputs Control Voltage VDC 4 V DC +10 %/- 15 % DC-operated VDC 4 V DC +10 %/- 15 % COMESTICATION (NOT SEED OF SEED	Solid or stranded		AWG	18 - 10
	Tightening torque		Nm	1.2
Control circuit Up to a port ated DC-operated VDC 24 VDC+10 %/-15 % Current consumption 24 V mA 1.6 External 24 V mA 1.6 Pick-up voltage VDC 17.3 - 27 DC-operated VDC 17.3 - 27 DCoperated VDC 0 - 3 DC operated VDC 0 - 3 AC operated VDC 0 - 3 VDC 0 - 3	Screwdriver		mm	
Digital inputs Control voltage V DC 24 V DC +10 %/- 15 % DC-operated V DC 24 V DC +10 %/- 15 % Current consumption 24 V mA 1.6 External 24 V mA 1.6 Pick-up voltage x U _s V DC 17.3 - 27 AC operated x U _s V DC 0 - 3 DCo-perated x U _s V DC 0 - 3 AC operated V AC 0 - 3 V AC Pick-up time ms 50 SO DC operated ms 50 SO AC operated ms 50 SO DC operated ms 50 SO DC operated ms 50 SO Regulator supply ws 24 V AC/DC + 10 %/ - 15 % SO Voltage U _s V 24 V AC/DC + 10 %/ - 15 % SO Current consumption U _s V External supply voltage External supply voltage	Control circuit			120
DC-operated	Digital inputs			
Current consumption 24 V mA 1.6 External 24 V mA 1.6 Pick-up voltage v Us 17.3 - 27 DC-operated v Us 17.3 - 27 Drop-out voltage v Us v DC DC operated v DC 0 - 3 AC operated v AC 0 - 3 Pick-up time mS 250 DC operated mS 250 AC operated mS 250 DC operated mS 250 DC operated mS 250 DC operated mS 250 DC operated mS 250 Regulator supply v Voltage	Control voltage			
External 24 V mA 1.6 Pick-up voltage x U _s x U _s DC-operated v DC 17.3 - 27 AC operated x U _s v DC DC operated v DC 0 - 3 AC operated v AC 0 - 3 Pick-up time ms 250 DC operated ms 250 AC operated ms 250 AC operated ms 250 DC operated ms 350 DC operated ms 350 Regulator supply v 24 V AC/DC + 10 %/- 15 % Voltage u 40 MC/DC + 10 %/- 15 % Current consumption le mA 50 External supply voltage External supply voltage	DC-operated		V DC	24 V DC +10 %/- 15 %
Pick-up voltage x U _s DC-operated V DC 17.3 - 27 AC operated x U _s ' C P P P P P P P P P P P P P P P P P P	Current consumption 24 V		mA	
DC-operated V DC 17.3 - 27 AC operated X U _S V DC 17.3 - 27 DC operated X U _S V DC 0 - 3 AC operated V AC 0 - 3 Pick-up time ms 250 AC operated ms 250 AC operated ms 250 Drop-out time ms 350 Regulator supply Voltage 24 V AC/DC + 10 %/- 15 % Voltage Voltage mA 50 Current consumption I _e mA 50 Regulator supply External supply voltage External supply voltage	External 24 V		mA	1.6
AC operated V AC 17.3 - 27 Drop-out voltage x U _s - 3 DC operated V AC 0 - 3 AC operated V AC 0 - 3 Pick-up time ms 250 AC operated ms 250 Drop-out time ms 250 DC operated ms 350 Regulator supply Woltage V U _s V V 24 V AC/DC +10 %/- 15 % Current consumption I _e mA 50 Notes External supply voltage	Pick-up voltage		x U _s	
Drop-out voltage DC operated AC operated Pick-up time DC operated AC operated DC operated DC operated AC operated DC operated AC operated AC operated AC operated Drop-out time DC operated DC operate	DC-operated		V DC	17.3 - 27
DC operated VDC 0-3 AC operated VAC 0-3 Pick-up time SDC operated SDC	AC operated		V AC	17.3 - 27
VAC operated Pick-up time DC operated MS 250 AC operated MS 250 Drop-out time DC operated MS 250 Proportitime MS 250 Regulator supply MS 250 The control of th	Drop-out voltage	x U _s		
Pick-up time DC operated AC operated Drop-out time DC operated Notage Voltage Voltage Notes Voltage Le Ma DC operated Le MA DC operated DC operat	DC operated		V DC	0 - 3
DC operatedms250AC operatedms250Drop-out time"The control of time of the control of time of the control of time of ti	AC operated		V AC	0 - 3
AC operatedms250Drop-out timeTotalTotalDC operatedMs350Regulator supplyTotalTotalVoltageUsV24 V AC/DC +10 %/- 15 %Current consumptionIemA50NotesNotesExternal supply voltage	Pick-up time			
Drop-out time DC operated Regulator supply Voltage Current consumption Notes The state of the	DC operated		ms	250
DC operated ms 350 Regulator supply	AC operated		ms	250
Regulator supply Voltage Current consumption Notes Voltage Us V 24 V AC/DC +10 %/- 15 % External supply voltage	Drop-out time			
VoltageUsV24 V AC/DC +10 %/- 15 %Current consumptionIemA50NotesExternal supply voltage	DC operated		ms	350
Current consumption I _e mA 50 Notes External supply voltage	Regulator supply			
Notes External supply voltage	Voltage	U _s	V	24 V AC/DC +10 %/- 15 %
	Current consumption	I _e	mA	50
Relay outputs	Notes			External supply voltage
	Relay outputs			

Number		1 (TOR)
Voltage range	V AC	= U _S
AC-11 current range	А	1 A, AC-11
Soft start function		
Ramp times		
Acceleration	s	
Ramp time, max.	s	30
Deceleration	S	0 - 30
Start voltage (= turn-off voltage)	%	30 100
Start pedestal	%	30 - 100
Fields of application		
Fields of application		Soft starting of three-phase asynchronous motors
1-phase motors		•
3-phase motors		✓
Functions		
Fast switching (semiconductor contactor)		- (minimum ramp time 1s)
Soft start function		✓
Reversing starter		External solution required
Suppression of closing transients		✓
Suppression of DC components for motors		✓
Potential isolation between power and control sections		✓

Design verification as per IEC/EN 61439

Dooign vormoution do por 120,211 or 100			
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	0.45
Static heat dissipation, non-current-dependent	P _{vs}	W	0.45
Heat dissipation capacity	P _{diss}	W	0
Operating ambient temperature min.		°C	-40
Operating ambient temperature max.		°C	40
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) / Soft starter (EC000640)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Load breakout, motor breakout / Semiconductor motor controller or soft starter (ecl@ss10.0.1-27-37-09-07 [AC0300011])

(eti@8810.0.1-27-07-09-07 [ACO300011])		
Rated operation current le at 40 °C Tu	Α	9
Rated operating voltage Ue	V	230 - 460
Rated power three-phase motor, inline, at 230 V	kW	2.2
Rated power three-phase motor, inline, at 400 V	kW	4
Rated power three-phase motor, inside delta, at 230 V	kW	0
Rated power three-phase motor, inside delta, at 400 V	kW	0
Function		Single direction
Internal bypass		Yes
With display		No
Torque control		No
Rated surrounding temperature without derating	°C	40
Rated control supply voltage Us at AC 50HZ	V	24 - 24
Rated control supply voltage Us at AC 60HZ	V	24 - 24
Rated control supply voltage Us at DC	V	24 - 24
Voltage type for actuating		AC/DC
Integrated motor overload protection		No
Release class		Other
Degree of protection (IP)		IP20
Degree of protection (NEMA)		1

Approvals

Product Standards	IEC/EN 60947-4-2; GB 14048.6; UL 508; CSA-C22.2 No 0-M91; CSA-C22.2 No 14-05 CE
UL File No.	E251034
CSA File No.	2511305
CSA Class No.	321106
Suitable for	Branch circuits
Max. Voltage Rating	480 V
Degree of Protection	IP20; UL/CSA Type 1

Dimensions 00000 130 mm (5.12") 125 mm (4.92") 00 0 0 1 ووووو 00000 ПЖ 4 x M4 35 mm 95 mm (3.74") (1.38") 45 mm (1.77")