

Soft starter, 3p, 9A, 200-480VAC, us=110/230VAC



Part no. **DS7-342SX009N0-N**
 Catalog No. **134928**
 Eaton Catalog No. **DS7-342SX009N0-N**
 EL-Nummer **4134269**
 (Norway)

Delivery 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		110 - 230 V AC
Control voltage	U_C		110 - 230 V AC
Assigned motor rating (Standard connection, In-Line)			
at 400 V, 50 Hz	P	kW	4
at 460 V, 60 Hz	P	HP	5
Rated operational current			
AC-53	I_e	A	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			
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
Ambient temperature			
Operation	θ	°C	-5 - +40 up to 60 at 2% derating per Kelvin temperature rise
Storage	θ	°C	-25 - +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			II/2
Shock resistance			8 g/11 ms
Vibration resistance to EN 60721-3-2			2M2
Radio interference level (IEC/EN 55011)			A
Static heat dissipation, non-current-dependent	P_{Vs}	W	0.45
Weight		kg	0.4

Main conducting paths

Rated operating voltage	U_e	V AC	200 - 480
Supply frequency	f_{LN}	Hz	50/60
Rated operational current	I_e	A	

AC-53	I _e	A	9
Assigned motor rating (Standard connection, In-Line)			
at 230 V, 50 Hz	P	kW	2.2
at 400 V, 50 Hz	P	kW	4
at 200 V, 60 Hz	P	HP	2
at 230 V, 60 Hz	P	HP	3
at 460 V, 60 Hz	P	HP	5
Overload cycle to IEC/EN 60947-4-2			
AC-53a			9 A: AC-53a: 3 - 5: 75 - 10
Internal bypass contacts			✓
Short-circuit rating			
Type "1" coordination			PKM0-10 (+ CL-PKZ0)
Type „2“ coordination (additional with the fuses for coordination type „1“)			3 x 170M1362
Fuse base (number x part no.)			
			3 x 170H1007

Terminal capacities

Cable lengths			
Solid		mm ²	1 x (0.75 - 4) 2 x (0.75 - 2.5)
Flexible with ferrule		mm ²	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Solid or stranded		AWG	18 - 10
Tightening torque		Nm	1.2
Screwdriver (PZ: Pozidriv)		mm	PZ2; 1 x 6 mm
Control cables			
Solid		mm ²	1 x (0.75 - 4) 2 x (0.75 - 2.5)
Flexible with ferrule		mm ²	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Solid or stranded		AWG	18 - 10
Tightening torque		Nm	1.2
Screwdriver		mm	0,8 x 5,5 1 x 6

Control circuit

Digital inputs			
Control voltage			
AC operated		V AC	110 V AC - 15 % - 230 V AC +10 %
Current consumption 24 V			
External 24 V		mA	1.6
Current consumption 230 V			
Pick-up voltage		x U _s	
AC operated		V AC	108 - 253
Drop-out voltage			
AC operated	x U _s	V AC	0 - 15
Pick-up time			
AC operated		ms	250
Drop-out time			
AC operated		ms	350
Regulator supply			
Voltage	U _s	V	110 V AC -15 % - 230 V AC +10 %
Current consumption	I _e	mA	50
Notes			External supply voltage
Relay outputs			
Number			1 (TOR)
Voltage range		V AC	= U _s
AC-11 current range		A	1 A, AC-11

Soft start function

Ramp times			
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Acceleration	s	1 - 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		✓

Notes

Rated impulse withstand voltage:

- 1.2 μs/50 μs (rise time/fall time of the pulse to IEC/EN 60947-2 or -3)
- Applies for control circuit/power section/enclosure

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	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 max.		°C	-5
Operating ambient temperature max.		°C	40
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			
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			
10.2.5 Lifting			
10.2.6 Mechanical impact			
10.2.7 Inscriptions			
10.3 Degree of protection of ASSEMBLIES			Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances			
10.5 Protection against electric shock			
10.6 Incorporation of switching devices and components			
10.7 Internal electrical circuits and connections			
10.8 Connections for external conductors			
10.9 Insulation properties			
10.9.2 Power-frequency electric strength			
10.9.3 Impulse withstand voltage			
10.9.4 Testing of enclosures made of insulating material			
10.10 Temperature rise			
10.11 Short-circuit rating			The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.12 Electromagnetic compatibility			
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.

Technical data ETIM 6.0

Low-voltage industrial components (EG000017) / Soft starter (EC000640)

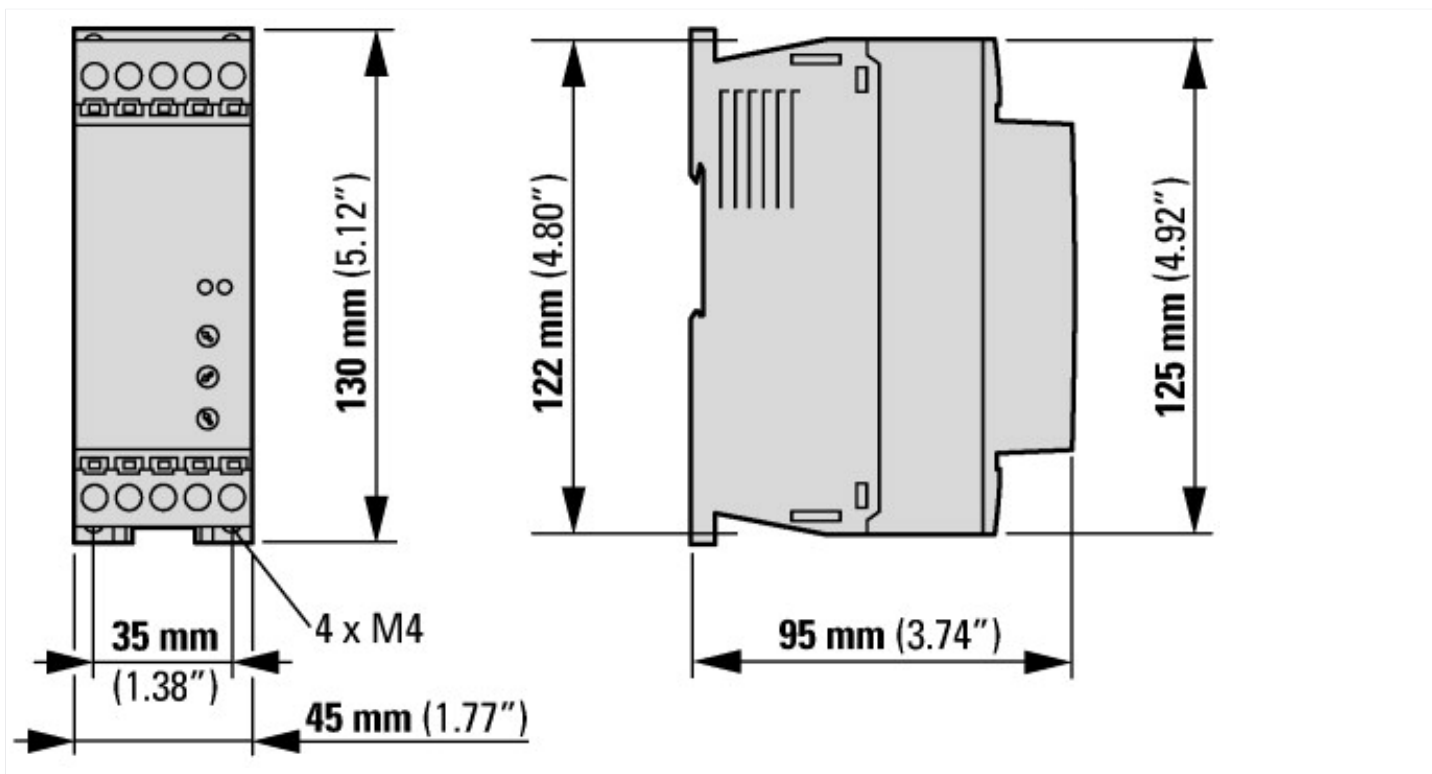
Electric engineering, automation, process control engineering / Low-voltage switch technology / Load breakout, motor breakout / Semiconductor motor controller or soft starter (ec@ss8.1-27-37-09-07 [ACO300008])

Rated operation current I_e at 40 °C T_u	A	9
Rated operating voltage U_e	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
Internal bypass		Yes
With display		No
Torque control		No
Rated surrounding temperature without derating	°C	40
Rated control supply voltage U_s at AC 50HZ	V	110 - 230
Rated control supply voltage U_s at AC 60HZ	V	110 - 230
Rated control supply voltage U_s at DC	V	0 - 0
Voltage type for actuating		AC
Integrated motor overload protection		No

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 marking
UL File No.		E251034
CSA File No.		2511305
CSA Class No.		321106
Specially designed for North America		No
Suitable for		Branch circuits
Current Limiting Circuit-Breaker		No
Max. Voltage Rating		480 V
Degree of Protection		IP20; UL/CSA Type 1

Dimensions



Additional product information (links)

IL03902003Z Instructions for DS7 Soft Starter	
IL03902003Z Instructions for DS7 Soft Starter	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03902003Z2017_02.pdf
MN03901001Z Manual DS7 soft starters	
MN03901001Z Handbuch Softstarter DS7 - Deutsch	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN03901001Z_DE.pdf
MN03901001Z Manual DS7 soft starters - English	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN03901001Z_EN.pdf
MN03901001Z Manuale Softstarter DS7 - italiano	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN03901001Z_IT.pdf
CA04020001Z_EN-INT Product range catalog: Efficient Engineering for starting and controlling motors.	http://www.eaton.eu/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct_1095238.pdf