



Soft starter, 12 A, 200 - 480 V AC, Us= 24 V AC/DC, Frame size FS1

Part no. DS7-340SX012N0-N
134911
EL Number 4134263
(Norway)

General specifications		
Product name		Eaton DS7 Soft starter
Part no.		DS7-340SX012N0-N
EAN		4015081316960
Product Length/Depth		94 millimetre
Product height		130 millimetre
Product width		45 millimetre
Product weight		0.35 kilogram
Certifications		UL UkrSEPRO CSA-C22.2 No 0-M91 UL 508 UL File No.: E251034 CSA CE CSA-C22.2 No 14-05 IEC/EN 60947-4-2 CSA Class No.: 321106 CSA File No.: 2511305 GB 14048.6 CSA22.2-14 C-Tick
Product Tradename		DS7
Product Type		Soft starter
Product Sub Type		None
Features & Functions		
Fitted with:		Internal bypass Internal bypass contacts
Functions		Suppression of closing transients Potential isolation between power and control sections Soft start function Min. ramp time 1 s - fast switching (semiconductor contactor) Suppression of DC components for motors Single direction
General information		
Class		Other
Connection to SmartWire-DT		No
Degree of protection		NEMA 1 IP20
Frame size		FS1
Mains voltage - min		200 V
Mains voltage - max		480 V
Overvoltage category		II
Pollution degree		2
Radio interference class		Class B (EN 55011)
Suitable for		Branch circuits, (UL/CSA)
Type		Soft starter for three-phase loads
Voltage type		AC/DC
Ambient conditions, mechanical		
Mounting position		Vertical
Shock resistance		8 g, 11 ms, Mechanical
Vibration resistance		2M2 to EN 60721-3-2
Climatic environmental conditions		
Altitude		Above 1000 m with 1 % derating per 100 m Max. 2000 m
Ambient operating temperature - min		-5 °C

Ambient operating temperature - max		40 °C
Ambient storage temperature - min		-25 °C
Ambient storage temperature - max		60 °C
Climatic proofing		Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-3
Main conducting paths		
Overload cycle		AC-53a: 3 - 5: 75 - 10
Rated operational current (Ie) at AC-53		12 A
Rated operational voltage (Ue) - min		230 V
Rated operational voltage (Ue) - max		480 V
Short-circuit protection rating		3 x 170M1362, Type „2“ coordination (additional with the fuses for coordination type „1“), Main conducting paths PKM0-12 (+ CL-PKZ0), Type “1” coordination, Main conducting paths
Supply frequency		50/60 Hz, fLN, Main circuit
Voltage rating - max		480 V
Motor rating		
Assigned motor power at 200/208 V, 60 Hz, 3-phase		3 HP
Assigned motor power at 220/230 V, 60 Hz, 3-phase		3 HP
Assigned motor power at 460/480 V, 60 Hz, 3-phase		10 HP
Rated operational power at 220/230 V, 50 Hz		3 kW
Rated operational power at 400 V, 50 Hz		5.5 kW
Terminal capacities		
Terminal capacity (flexible with ferrule)		1 x (0.75 - 2.5) mm ² , Main cables 2 x (0.75 - 2.5) mm ² , Control circuit cables 1 x (0.75 - 2.5) mm ² , Control circuit cables 2 x (0.75 - 2.5) mm ² , Main cables
Terminal capacity (solid)		2 x (0.75 - 2.5) mm ² , Main cables 2 x (0.75 - 2.5) mm ² , Control circuit cables 1 x (0.75 - 4) mm ² , Control circuit cables 1 x (0.75 - 4) mm ² , Main cables
Terminal capacity (solid/stranded AWG)		18 - 10, Control circuit cables 18 - 10, Main cables
Screwdriver size		0.6 x 5.5 mm/1 x 6 mm, Terminal screws, Control circuit cables PZ2, 1 x 6 mm, Terminal screw, Standard screwdriver
Tightening torque		1.2 Nm, Screw terminals, Control circuit cables 1.2 Nm
Control circuit		
Current consumption		1.6 mA, Control circuit, Digital inputs, External 24 V 50 mA, Control circuit, Regulator supply
Drop-out time		350 ms, Control circuit, Digital Inputs, DC operated
Drop-out voltage		AC operated: 0 - 3 V, AC operated 0 - 3 V, DC operated
Pick-up time		250 ms at DC 250 ms at AC
Pick-up voltage		17.3 - 27 V DC 17.3 - 27 V AC
Rated control supply voltage (Us) at AC, 50 Hz - min		24 V
Rated control supply voltage (Us) at AC, 50 Hz - max		24 V
Rated control supply voltage (Us) at AC, 60 Hz - min		24 V
Rated control supply voltage (Us) at AC, 60 Hz - max		24 V
Rated control supply voltage (Us) at DC - min		24 V
Rated control supply voltage (Us) at DC - max		24 V
Input/Output		
Number of outputs		1 Relay Output (TOR)
Output voltage		24 V AC/DC
Protection		Finger and back-of-hand proof, Protection against direct contact
Rated control voltage (Uc)		24 V DC (-15 %/+10 %) 24 V AC (-15 %/+10 %) 24 V AC 24 V DC
Rated operational current (Ie) at AC-11		1 A
Soft start function		

Application			Soft starting of three-phase asynchronous motors 3-phase motors: Yes 1-phase motors: No
Delay time			0 - 30 s, Soft start function, Ramp times
Ramp/run-up time			1 - 30 s
Start voltage			Min. 30 %, Soft start function, Start voltage = turn-off voltage Max. 100 %, Soft start function, Start voltage = turn-off voltage
Design verification			
Equipment heat dissipation, current-dependent P _{vid}			0.6 W
Heat dissipation capacity P _{diss}			0 W
Heat dissipation per pole, current-dependent P _{vid}			0 W
Rated operational current for specified heat dissipation (I _n)			12 A
Static heat dissipation, non-current-dependent P _{vs}			0.6 W
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 Resist. of insul. mat. to abnormal heat/fire by internal elect. 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.
10.9.2 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 9.0

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 (ec1@ss13-27-37-09-07 [AC0300016])			
Rated operation current I _e at 40 °C T _u	A		12
Rated operating voltage U _e	V		230 - 480
Rated power three-phase motor, inline, at 230 V	kW		3
Rated power three-phase motor, inline, at 400 V	kW		5.5
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 AC 50 Hz	V		24 - 24
Rated control supply voltage AC 60 Hz	V		24 - 24
Rated control supply voltage 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