



Soft starter, 16 A, 200 - 480 V AC, Us= 24 V AC/DC, Frame size FS2

Part no. **DS7-340SX016N0-N**
134912
EL Number (Norway) **4134264**

Powering Business Worldwide™

General specifications

Product name	Eaton DS7 Soft starter
Part no.	DS7-340SX016N0-N
EAN	4015081316977
Product Length/Depth	118 millimetre
Product height	150 millimetre
Product width	45 millimetre
Product weight	0.4 kilogram
Compliances	CE Marked
Certifications	EN 60947-4-2 UL 508 IEC 60947-4-2 CSA Std. C22.2 No. 14-05 CSA Std. C22.2 No. 0-M91 CSA Class No.: 321106 UL File No.: E251034 CSA22.2-14 CSA-C22.2 No 0-M91 CSA CE GB 14048.6 UL IEC/EN 60947-4-2 UkrSEPRO CSA File No.: 2511305 C-Tick CSA-C22.2 No 14-05
Product Tradename	DS7
Product Type	Soft starter
Product Sub Type	None
Catalog Notes	Ambient Operating Temperature up to 60 at 2% derating per Kelvin temperature rise External Reversing starter solution required Regulator supply: External supply voltage

Features & Functions

Fitted with:	Internal bypass Internal bypass contacts
Functions	Min. ramp time 1 s - fast switching (semiconductor contactor) Suppression of closing transients Suppression of DC components for motors Potential isolation between power and control sections Single direction Soft start function

General information

Class	Other
Connection to SmartWire-DT	No
Degree of protection	NEMA 1 IP20
Frame size	FS2
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
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Shock resistance	8 g, 11 ms, Mechanical
Vibration resistance	2M2 to EN 60721-3-2
Climatic environmental conditions	
Altitude	Max. 2000 m Above 1000 m with 1 % derating per 100 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, constant, to IEC 60068-2-3 Damp heat, cyclic, to IEC 60068-2-30
Main conducting paths	
Overload cycle	AC-53a: 3 - 5: 75 - 10
Rated operational current (Ie) at AC-53	16 A
Rated operational voltage (Ue) - min	230 V
Rated operational voltage (Ue) - max	480 V
Short-circuit protection rating	PKM0-16 (+ CL-PKZ0), Type "1" coordination, Main conducting paths 3 x 170M1364, Type „2" coordination (additional with the fuses for coordination type „1"), 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	5 HP
Assigned motor power at 220/230 V, 60 Hz, 3-phase	5 HP
Assigned motor power at 460/480 V, 60 Hz, 3-phase	10 HP
Rated operational power at 220/230 V, 50 Hz	4 kW
Rated operational power at 400 V, 50 Hz	7.5 kW
Terminal capacities	
Terminal capacity (flexible with ferrule)	2 x (0.75 - 10) mm ² , Main cables 1 x (0.75 - 16) mm ² , Main cables 1 x (0.5 - 1.5) mm ² , Control circuit cables 2 x (0.5 - 0.75) mm ² , Control circuit cables
Terminal capacity (solid)	2 x (0.75 - 10) mm ² , Main cables 2 x (0.5 - 1.0) mm ² , Control circuit cables 1 x (0.5 - 2.5) mm ² , Control circuit cables 1 x (0.75 - 16) mm ² , Main cables
Terminal capacity (solid/stranded AWG)	2 x (21 - 18), Control circuit cables 18 - 6, Main cables 1 x (21 - 14), Control circuit cables
Terminal capacity (stranded)	2 x (0.5 - 1.0) mm ² , Control circuit cables 1 x (0.5 - 1.5) mm ² , Control circuit cables 1 x 16 mm ² , Main cables
Screwdriver size	0.6 x 3.5 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 3.2 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 AC 250 ms at DC
Pick-up voltage	17.3 - 27 V AC 17.3 - 27 V DC
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	2 Relay Outputs (TOR, Ready)
Output voltage	250 V AC (relay outputs)
Protection	Finger and back-of-hand proof, Protection against direct contact
Rated control voltage (Uc)	24 V DC (-15 %/+10 %) 24 V DC 24 V AC 24 V AC (-15 %/+10 %)
Rated operational current (Ie) at AC-11	1 A

Soft start function

Application	1-phase motors: No 3-phase motors: Yes Soft starting of three-phase asynchronous motors
Delay time	0 - 30 s, Soft start function, Ramp times
Ramp/run-up time	1 - 30 s
Start voltage	Max. 100 %, Soft start function, Start voltage = turn-off voltage Min. 30 %, Soft start function, Start voltage = turn-off voltage

Design verification

Equipment heat dissipation, current-dependent Pvid	0.8 W
Heat dissipation capacity Pdiss	0 W
Heat dissipation per pole, current-dependent Pvid	0 W
Rated operational current for specified heat dissipation (In)	16 A
Static heat dissipation, non-current-dependent Pvs	0.8 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 (ecl@ss13-27-37-09-07 [AC0300016])	
Rated operation current Ie at 40 °C Tu	A 16
Rated operating voltage Ue	V 230 - 480
Rated power three-phase motor, inline, at 230 V	kW 4
Rated power three-phase motor, inline, at 400 V	kW 7.5
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