

Soft starter, 160 A, 200 - 480 V AC, Us= 24 V AC/DC, Frame size FS4



Part no. DS7-340SX160N0-N
134922
EL Number 4134207
(Norway)

Product name	Eaton DS7 Soft starter
Part no.	DS7-340SX160N0-N
EAN	4015081317370
Product Length/Depth	178 millimetre
Product height	215 millimetre
Product width	108 millimetre
Product weight	3.7 kilogram
Certifications	UL CSA22.2-14 IEC/EN 60947-4-2 CSA-C22.2 No 0-M91 UkrSEPRO CSA Class No.: 321106 UL 508 GB 14048.6 CE UL File No.: E251034 C-Tick CSA CSA File No.: 2511305 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
Fitted with:	Internal bypass Internal bypass contacts
Functions	Suppression of closing transients Single direction Suppression of DC components for motors Min. ramp time 1 s - fast switching (semiconductor contactor) Potential isolation between power and control sections Soft start function
Class	Other
Connection to SmartWire-DT	No
Degree of protection	IP20 NEMA 1
Frame size	FS4
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
Mounting position	Vertical
Shock resistance	8 g, 11 ms, Mechanical
Vibration resistance	2M2 to EN 60721-3-2
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
Overload cycle		AC-53a: 3 - 5: 75 - 10
Rated operational current (Ie) at AC-53		160 A
Rated operational voltage (Ue) - min		230 V
Rated operational voltage (Ue) - max		480 V
Short-circuit protection rating		3 x 170M5008, Type „2“ coordination (additional with the fuses for coordination type „1“), Main conducting paths NZMN2-M200, Type “1” coordination, Main conducting paths
Supply frequency		50/60 Hz, fLN, Main circuit
Voltage rating - max		480 V
Assigned motor power at 200/208 V, 60 Hz, 3-phase		50 HP
Assigned motor power at 220/230 V, 60 Hz, 3-phase		60 HP
Assigned motor power at 460/480 V, 60 Hz, 3-phase		125 HP
Rated operational power at 220/230 V, 50 Hz		45 kW
Rated operational power at 400 V, 50 Hz		90 kW
Terminal capacity (copper band)		10 x 16 x 0.8 mm, Main cables 2 x 9 x 0.8 mm, Main cables
Terminal capacity (flexible with ferrule)		2 x (0.5 - 0.75) mm ² , Control circuit cables 1 x (0.5 - 1.5) mm ² , Control circuit cables
Terminal capacity (solid)		2 x (4 - 70) mm ² , Main cables 1 x (0.5 - 2.5) mm ² , Control circuit cables 1 x (4 - 185) mm ² , Main cables 2 x (0.5 - 1.0) mm ² , Control circuit cables
Terminal capacity (solid/stranded AWG)		1 x (21 - 14), Control circuit cables 2 x (21 - 18), Control circuit cables 1 x (12 - 350 kcmil), Main cables 2 x (12 - 00), Main cables
Terminal capacity (stranded)		2 x (0.5 - 1.0) mm ² , Control circuit cables 1 x (4 - 185) mm ² , Main cables 2 x (4 - 70) mm ² , Main cables 1 x (0.5 - 1.5) mm ² , Control circuit cables
Screwdriver size		PZ2, 1 x 6 mm, Terminal screw, Standard screwdriver 0.6 x 3.5 mm, Terminal screws, Control circuit cables
Tightening torque		14 Nm (> 10 mm ²) 0.4 Nm, Screw terminals, Control circuit cables 5 Nm (≤ 10 mm ²)
Current consumption		0,6 A/50 ms, Control circuit, Regulator supply at peak performance (close bypass) at 24 V DC 50 mA, Control circuit, Regulator supply 1.6 mA, Control circuit, Digital inputs, External 24 V
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
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 24 V DC (-15 %/+10 %) 24 V AC 24 V AC (-15 %/+10 %)
Rated operational current (Ie) at AC-11		1 A
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		Min. 30 %, Soft start function, Start voltage = turn-off voltage Max. 100 %, Soft start function, Start voltage = turn-off voltage
Equipment heat dissipation, current-dependent Pvid		30 W
Heat dissipation capacity Pdis		0 W
Heat dissipation per pole, current-dependent Pvid		0 W
Rated operational current for specified heat dissipation (In)		160 A
Static heat dissipation, non-current-dependent Pvs		30 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 8.0

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@ss10.0.1-27-37-09-07 [ACO300011])

Rated operation current Ie at 40 °C Tu	A	160
Rated operating voltage Ue	V	230 - 480
Rated power three-phase motor, inline, at 230 V	kW	45
Rated power three-phase motor, inline, at 400 V	kW	90
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