

Specifications



Photo is representative



Eaton 171742

Eaton DS7 Soft starter, 9 A, 200 - 480 V AC, 24 V AC/DC, Frame size FS1, Ambient temperature Operation -40 - +40 °C

General specifications

PRODUCT NAME	Eaton DS7 Soft starter
CATALOG NUMBER	171742
MODEL CODE	DS7-340SX009N0-L
EAN	4015081680672
PRODUCT LENGTH/DEPTH	94 mm
PRODUCT HEIGHT	130 mm
PRODUCT WIDTH	45 mm
PRODUCT WEIGHT	0.41 kg

CERTIFICATIONS

UkrSEPRO
IEC/EN 60947-4-2
CSA File No.: 2511305
CSA
UL File No.: E251034
UL 508
GB 14048.6
CSA Class No.: 321106
CSA22.2-14
CE
UL
CSA-C22.2 No 14-05
C-Tick
CSA-C22.2 No 0-M91



Powering Business Worldwide

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
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AMBIENT OPERATING TEMPERATURE - MAX	40 °C
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AMBIENT STORAGE TEMPERATURE - MAX	60 °C
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AMBIENT OPERATING TEMPERATURE - MIN	-40 °C
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AMBIENT STORAGE TEMPERATURE - MIN	-40 °C
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CLIMATIC PROOFING	Cold to EN 60068-2-1 Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-3
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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	0 - 3 V, DC operated AC operated: 0 - 3 V, AC 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 - MAX	24 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN	24 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX	24 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN	24 V
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX	24 V
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MIN	24 V

Design verification

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.
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	Does not apply, since the

AGAINST ELECTRIC SHOCK	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.
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	0.45 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	9 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	0.45 W

Features & functions

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

General information

CLASS	Other
CONNECTION TO SMARTWIRE-DT	No
DEGREE OF PROTECTION	NEMA 1 IP20
FRAME SIZE	FS1
MAINS VOLTAGE - MAX	480 V
MAINS VOLTAGE - MIN	200 V
OVERVOLTAGE CATEGORY	II
POLLUTION DEGREE	2
RADIO INTERFERENCE CLASS	Class B (EN 55011)
SUITABLE FOR	Branch circuits, (UL/CSA)

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 AC 24 V DC (-15 %/+10 %) 24 V DC
RATED OPERATIONAL CURRENT (IE) AT AC-11	1 A

Motor rating	
ASSIGNED MOTOR POWER AT 200/208 V, 60 HZ, 3-PHASE	2 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	5 HP
RATED OPERATIONAL POWER AT 220/230 V, 50 HZ	2.2 kW
RATED OPERATIONAL POWER AT 400 V, 50 HZ	4 kW

TYPE	Soft starter for three-phase loads
VOLTAGE TYPE	AC/DC

Main conducting paths	
OVERLOAD CYCLE	AC-53a: 3 - 5: 75 - 10
RATED OPERATIONAL CURRENT (IE) AT AC-53	9 A
RATED OPERATIONAL VOLTAGE (UE) - MAX	480 V
RATED OPERATIONAL VOLTAGE (UE) - MIN	230 V
SHORT-CIRCUIT PROTECTION RATING	3 x 170M1362, Type „2“ coordination (additional with the fuses for coordination type „1“), Main conducting paths PKM0-10 (+ CL-PKZ0), Type “1” coordination, Main conducting paths
SUPPLY FREQUENCY	50/60 Hz, fLN, Main circuit
VOLTAGE RATING - MAX	480 V

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	30 s
START VOLTAGE	Min. 30 %, Soft start function, Start voltage = turn-off voltage Max. 100 %, Soft start function, Start voltage = turn-off voltage

Terminal capacities

SCREWDRIVER SIZE	PZ2, 1 x 6 mm, Terminal screw, Standard screwdriver 0.6 x 5.5 mm/1 x 6 mm, Terminal screws, Control circuit cables
TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	1 x (0.75 - 2.5) mm ² , Main cables 1 x (0.75 - 2.5) mm ² , Control circuit cables 2 x (0.75 - 2.5) mm ² , Main cables 2 x (0.75 - 2.5) mm ² , Control circuit cables
TERMINAL CAPACITY (SOLID)	2 x (0.75 - 2.5) mm ² , Main cables 1 x (0.75 - 4) mm ² , Main cables 1 x (0.75 - 4) mm ² , Control circuit cables 2 x (0.75 - 2.5) mm ² , Control circuit cables
TERMINAL CAPACITY (SOLID/STRANDED AWG)	18 - 10, Control circuit cables 18 - 10, Main cables
TIGHTENING TORQUE	1.2 Nm, Screw terminals, Control circuit cables 1.2 Nm

Resources

BROCHURES	eaton-softstarter-s811-ds7-brochure-br039001en-en-us.pdf
CATALOGUES	eaton-drives-soft-starter-catalog-ca04020001zen-us.pdf
DECLARATIONS OF CONFORMITY	eaton-soft-starter-declaration-of-conformity-eu250527en.pdf eaton-soft-starter-declaration-of-conformity-uk251010en.pdf
DRAWINGS	eaton-semiconductor-contactors-swd-ds7-soft-starter-dimensions-003.eps eaton-semiconductor-contactors-softstarter-ds7-3d-drawing.eps
ECAD MODEL	DA-CE-ETN.DS7-340SX009N0-L
INSTALLATION INSTRUCTIONS	IL03902003Z2021_06.pdf
INSTALLATION VIDEOS	Soft starter DS7 up to 32 A
MANUALS AND USER GUIDES	eaton-ds7-soft-starter-mn03901001z-en-us.pdf
MCAD MODEL	eaton-soft-starters-mcad-drawings-ds7-1-100202.dwg eaton-low-voltage-soft-starters-3d-models-ds7-1-100202.stp

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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