

Specifications



Photo is representative



Eaton 134919

Eaton DS7 Soft starter, 81 A, 200 - 480 V AC,
Us= 24 V AC/DC, Frame size FS3

General specifications

PRODUCT NAME	Eaton DS7 Soft starter
CATALOG NUMBER	134919
MODEL CODE	DS7-340SX081N0-N
EAN	4015081317349
PRODUCT LENGTH/DEPTH	139 mm
PRODUCT HEIGHT	175 mm
PRODUCT WIDTH	93 mm
PRODUCT WEIGHT	1.8 kg
COMPLIANCES	CE Marked C-Tick Compliant
CERTIFICATIONS	UL Listed IEC 60947-4-2 EN 60947-4-2 CSA Certified CE UL 508 C-Tick CSA22.2-14 CSA File No.: 2511305 GB 14048.6 CSA Class No.: 321106 UkrSEPRO UL File No.: E251034 CSA-C22.2 No 0-M91 CSA UL IEC/EN 60947-4-2 CSA-C22.2 No 14-05



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Features & Functions

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

Ambient conditions, mechanical

MOUNTING POSITION	Vertical
SHOCK RESISTANCE	8 g, 11 ms, Mechanical
VIBRATION RESISTANCE	2M2 to EN 60721-3-2

General

CLASS	Other
CONNECTION TO SMARTWIRE-DT	No
DEGREE OF PROTECTION	IP20 NEMA 1
FRAME SIZE	3 4 FS3
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)
TYPE	Soft starter for three-phase loads
VOLTAGE TYPE	AC/DC

Climatic environmental conditions

ALTITUDE	Above 1000 m with 1 % derating per 100 m Max. 2000 m
AMBIENT OPERATING TEMPERATURE - MAX	40 °C
AMBIENT OPERATING TEMPERATURE - MIN	-5 °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	81 A
RATED OPERATIONAL CURRENT	81 A
RATED OPERATIONAL VOLTAGE (UE) - MAX	480 V
RATED OPERATIONAL VOLTAGE (UE) - MIN	230 V
SHORT-CIRCUIT PROTECTION RATING	NZMN1-M100, Type "1" coordination, Main conducting paths 3 x 170M4008, 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 25 HP

ASSIGNED MOTOR
POWER AT 220/230 V, 60 HZ, 3-PHASE 30 HP

ASSIGNED MOTOR
POWER AT 460/480 V, 60 HZ, 3-PHASE 60 HP

RATED OPERATIONAL
POWER AT 220/230 V, 50 HZ 22 kW

RATED OPERATIONAL
POWER AT 400 V, 50 HZ 45 kW

Terminal capacities

TERMINAL CAPACITY (COPPER BAND)	2 x 9 x 0.8 mm, Main cables 9 x 9 x 0.8 mm, Main cables
TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	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)	1 x (0.5 - 2.5) mm ² , Control circuit cables 2 x (6 - 25) mm ² , Main cables 2 x (0.5 - 1.0) mm ² , Control circuit cables 1 x (25 - 70) mm ² , Main cables
TERMINAL CAPACITY (SOLID/STRANDED AWG)	2 x (21 - 18), Control circuit cables 1 x (21 - 14), Control circuit cables 1 x (12 - 2/0), Main cables
TERMINAL CAPACITY (STRANDED)	1 x (25 - 70) mm ² , Main cables 2 x (0.5 - 1.0) mm ² , Control circuit cables 1 x (0.5 - 1.5) mm ² , Control circuit cables 2 x (6 - 25) 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	6 Nm (\leq 10 mm ²) 0.4 Nm, Screw terminals, Control circuit cables 9 Nm ($>$ 10 mm ²)

Control circuit

CURRENT CONSUMPTION	0,6 A/50 ms, Control circuit, Regulator supply at peak performance (close bypass) at 24 V DC 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
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN	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

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 AC (-15 %/+10 %) 24 V AC 24 V DC
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	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 PVID	18 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	81 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	18 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.

Resources

BROCHURES	eaton-softstarter-s811-ds7-brochure-br039001en-en-us.pdf
CATALOGUES	Product Range Catalog Drives Engineering
DECLARATIONS OF CONFORMITY	eaton-soft-starter-declaration-of-conformity-eu250527en.pdf eaton-soft-starter-declaration-of-conformity-uk251010en.pdf
DRAWINGS	eaton-semiconductor-contactors-softstarter-ds7-dimensions-002.eps eaton-semiconductor-contactors-softstarter-ds7-3d-drawing-005.eps
ECAD MODEL	ETN.DS7-340SX081N0-N
INSTALLATION INSTRUCTIONS	IL03902005Z2021_06.pdf
MANUALS AND USER GUIDES	eaton-ds7-soft-starter-mn03901001z-en-us.pdf
MCAD MODEL	eaton-low-voltage-soft-starters-drawings-ds7-3-100316.dwg eaton-low-voltage-soft-starters-3d-models-ds7-3-100316.stp
MULTIMEDIA	Soft starter DS7 up to 200 A
SPECIFICATIONS AND DATASHEETS	Eaton Specification Sheet - DS7-340SX081N0-N

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.

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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