Specifications



Photo is representative





Eaton 134939

Eaton DS7 Soft starter, 135 A, 200 - 480 V AC, Us= 110 - 230 V AC, Frame size FS4

General specifications	
PRODUCT NAME	Eaton DS7 Soft starter
CATALOG NUMBER	134939
MODEL CODE	DS7-342SX135N0-N
EAN	4015081317547
PRODUCT LENGTH/DEPTH	178 mm
PRODUCT HEIGHT	215 mm
PRODUCT WIDTH	108 mm
PRODUCT WEIGHT	3.7 kg
CERTIFICATIONS	UL 508 UL File No.: E251034 CSA Class No.: 321106 CE C-Tick CSA22.2-14 UkrSEPRO IEC/EN 60947-4-2 GB 14048.6 CSA File No.: 2511305 CSA-C22.2 No 0-M91 CSA-C22.2 No 14-05 UL CSA

Powering Business Worldwide

Features & Functions

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

General

CLASS	Other
CONNECTION TO SMARTWIRE-DT	No
DEGREE OF PROTECTION	NEMA 1 IP20
FRAME SIZE	FS4
MAINS VOLTAGE - MAX	480 V
MAINS VOLTAGE - MIN	200 V
OVERVOLTAGE CATEGORY	II
POLLUTION DEGREE	2
RADIO INTERFERENCE CLASS	Class A (EN 55011)
SUITABLE FOR	Branch circuits, (UL/CSA)
TYPE	Soft starter for three-phase loads
VOLTAGE TYPE	AC

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 - 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	135 A
RATED OPERATIONAL VOLTAGE (UE) - MAX	480 V
RATED OPERATIONAL VOLTAGE (UE) - MIN	230 V
SHORT-CIRCUIT PROTECTION RATING	NZMN2-M160, Type “1” coordination, Main conducting paths 3 x 170M4010, 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	40 HP
ASSIGNED MOTOR POWER AT 220/230 V, 60 HZ, 3-PHASE	50 HP
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE	100 HP
RATED OPERATIONAL POWER AT 220/230 V, 50 HZ	30 kW
RATED OPERATIONAL POWER AT 400 V, 50 HZ	75 kW

Terminal capacities

TERMINAL CAPACITY (COPPER BAND)	2 x 9 x 0.8 mm, Main cables 10 x 16 x 0.8 mm, Main cables
TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	1 x (0.5 - 1.5) mm², Control circuit cables 2 x (0.5 - 0.75) mm², Control circuit cables
TERMINAL CAPACITY (SOLID)	1 x (4 - 185) mm², Main cables 2 x (4 - 70) mm², Main cables 2 x (0.5 - 1.0) mm², Control circuit cables 1 x (0.5 - 2.5) mm², Control circuit cables
TERMINAL CAPACITY (SOLID/STRANDED AWG)	1 x (21 - 14), Control circuit cables 1 x (12 - 350 kcmil), Main cables 2 x (12 - 00), Main cables 2 x (21 - 18), Control circuit cables
TERMINAL CAPACITY (STRANDED)	1 x (0.5 - 1.5) mm², Control circuit cables 2 x (0.5 - 1.0) mm², Control circuit cables 1 x (4 - 185) mm², Main cables 2 x (4 - 70) mm², Main 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 mm²) 0.4 Nm, Screw terminals, Control circuit cables 5 Nm (≤ 10 mm²)

Control circuit

CURRENT CONSUMPTION	50 mA, Control circuit, Regulator supply 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
DROP-OUT TIME	350 ms, Control circuit, Digital Inputs, AC operated
DROP-OUT VOLTAGE	AC operated: 0 - 15 V, AC operated
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN	110 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN	110 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX	230 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN	110 V
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX	0 V
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MIN	0 V

Input/Output

INPUT CURRENT	4 mA (at 230 V AC, Digital inputs)
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)	110 - 230 V AC (-15 %/+10 %) 110 - 230 V AC
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	24 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	135 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	24 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-uk251010en.pdf eaton-soft-starter-declaration-of-conformity-eu250527en.pdf
DRAWINGS	eaton-semiconductor-contactors-swd-ds7-soft-starter-dimensions.eps eaton-semiconductor-contactors-softstarter-ds7-3d-drawing-006.eps
ECAD MODEL	DA-CE-ETN.DS7-342SX135N0-N
INSTALLATION INSTRUCTIONS	IL03902005Z2021_06.pdf
MANUALS AND USER GUIDES	eaton-ds7-soft-starter-mn03901001z-en-us.pdf
MCAD MODEL	DA-CD-ds7_4_100316 DA-CS-ds7_4_100316
MULTIMEDIA	Soft starter DS7 up to 200 A

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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