

Specifications



Photo is representative



Eaton 134953

Eaton DS7 Soft starter, 55 A, 200 - 480 V AC, 24 V DC, Frame size: FS3, Communication Interfaces: SmartWire-DT

General specifications

PRODUCT NAME	Eaton DS7 Soft starter
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CATALOG NUMBER	134953
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MODEL CODE	DS7-34DSX055N0-D
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EAN	4015081317684
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PRODUCT LENGTH/DEPTH	156 mm
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PRODUCT HEIGHT	175 mm
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PRODUCT WIDTH	93 mm
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PRODUCT WEIGHT	1.8 kg
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CERTIFICATIONS

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

Ambient conditions, mechanical

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

Control circuit

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	0 - 3 V, DC operated
PICK-UP TIME	250 ms at DC
PICK-UP VOLTAGE	17.3 - 27 V DC
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX	24 V
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MIN	24 V

Climatic environmental conditions

ALTITUDE	Above 1000 m with 1 % derating per 100 m Max. 2000 m
AMBIENT OPERATING TEMPERATURE - MAX	40 °C
AMBIENT STORAGE TEMPERATURE - MAX	60 °C
AMBIENT OPERATING TEMPERATURE - MIN	-5 °C
AMBIENT STORAGE TEMPERATURE - MIN	-25 °C
CLIMATIC PROOFING	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-3

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	Meets the product standard's requirements.

BY INTERNAL ELECT. EFFECTS	
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.
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	10 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	55 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	10 W

Features & functions

FAULT MEMORY	8 Faults
FITTED WITH:	Internal bypass Internal bypass contacts
FUNCTIONS	Suppression of closing transients Current limitation, with PKE Min. ramp time 1 s - fast switching (semiconductor contactor) Soft start function Suppression of DC components for motors Potential isolation between power and control sections Single direction
INTERFACES	SmartWire-DT (built-in)

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 %) or via SmartWire-DT 24 V DC
RATED OPERATIONAL CURRENT (IE) AT AC-11	1 A

General information

CLASS	Other
CONNECTION TO SMARTWIRE-DT	Yes
DEGREE OF PROTECTION	IP20 NEMA 1
FRAME SIZE	FS3
MAINS VOLTAGE - MAX	480 V
MAINS VOLTAGE - MIN	200 V
OVERVOLTAGE CATEGORY	II
POLLUTION DEGREE	2
PRODUCT CATEGORY	SmartWire-DT slave
RADIO INTERFERENCE CLASS	Class B (EN 55011)
SUITABLE FOR	Branch circuits, (UL/CSA)
TYPE	Soft starter for three-phase loads
VOLTAGE TYPE	DC

Main conducting paths

OVERLOAD CYCLE	AC-53a: 3 - 5: 75 - 10
RATED OPERATIONAL CURRENT (IE) AT AC-53	55 A
RATED OPERATIONAL VOLTAGE (UE) - MAX	480 V
RATED OPERATIONAL VOLTAGE (UE) - MIN	230 V
SHORT-CIRCUIT PROTECTION RATING	NZMN1-M63/PKZM4-57, Type "1" coordination, Main conducting paths 3 x 170M3013, 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 15 HP

ASSIGNED MOTOR

POWER AT 220/230 V, 60 HZ, 3-PHASE 20 HP

ASSIGNED MOTOR

POWER AT 460/480 V, 60 HZ, 3-PHASE 40 HP

RATED OPERATIONAL

POWER AT 220/230 V, 50 HZ 15 kW

RATED OPERATIONAL

POWER AT 400 V, 50 HZ 30 kW

Soft start function

APPLICATION

- 1-phase motors: No
- 3-phase motors: Yes
- Soft starting of three-phase asynchronous motors

CURRENT LIMITATION

(0 - 8) x I_e , Soft start function

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

Terminal capacities

SCREWDRIVER SIZE	PZ2, 1 x 6 mm, Terminal screw, Standard screwdriver 0.6 x 3.5 mm, Terminal screws, Control circuit cables
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)	2 x (0.5 - 1.0) mm ² , Control circuit cables 1 x (25 - 70) mm ² , Main cables 2 x (6 - 25) mm ² , Main cables 1 x (0.5 - 2.5) mm ² , Control circuit cables
TERMINAL CAPACITY (SOLID/STRANDED AWG)	1 x (21 - 14), Control circuit cables 1 x (12 - 2/0), Main cables 2 x (21 - 18), Control circuit cables
TERMINAL CAPACITY (STRANDED)	2 x (0.5 - 1.0) mm ² , Control circuit cables 1 x (25 - 70) mm ² , Main cables 2 x (6 - 25) mm ² , Main cables 1 x (0.5 - 1.5) mm ² , Control circuit cables
TIGHTENING TORQUE	6 Nm ($\leq$ 10 mm ²) 0.4 Nm, Screw terminals, Control circuit cables 9 Nm ($>$ 10 mm ²)

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-softstarter-ds7-dimensions-004.eps eaton-semiconductor-contactors-softstarter-ds7-3d-drawing-008.eps
ECAD MODEL	DA-CE-ETN.DS7-34DSX055N0-D
INSTALLATION INSTRUCTIONS	IL03902005Z2021_06.pdf
MANUALS AND USER GUIDES	MN05006002Z_EN eaton-ds7-soft-starter-mn03901001z-en-us.pdf
MCAD MODEL	eaton-soft-starters-mcad-drawings-ds7-3-darwin-100316.dwg DA-CS-ds7_3_darwin_100316
MULTIMEDIA	Soft starter DS7 up to 200 A
SALES NOTES	eaton-rmq-chemical-resistance-flyer-fl047011en-en-us.pdf

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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