Specifications

Eaton 134948

Eaton DS7 Soft starter, 16 A, 200 - 480 V AC, 24 V DC, Frame size: FS2, Communication Interfaces: SmartWire-DT

General specifications	
PRODUCT NAME	Eaton DS7 Soft starter
CATALOG NUMBER	134948
MODEL CODE	DS7-34DSX016N0-D
EAN	4015081317639
PRODUCT LENGTH/DEPTH	126 mm
PRODUCT HEIGHT	150 mm
PRODUCT WIDTH	45 mm
PRODUCT WEIGHT	0.4 kg
CERTIFICATIONS	C-Tick IEC/EN 60947-4-2 CSA-C22.2 No 14-05 GB 14048.6 CSA UL CE UL 508 UkrSEPRO CSA22.2-14 CSA-C22.2 No 0-M91

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Features & Functions

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

General

CLASS	Other
CONNECTION TO SMARTWIRE-DT	Yes
DEGREE OF PROTECTION	NEMA 1 IP20
FRAME SIZE	FS2
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

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

Main conducting paths

OVERLOAD CYCLE	AC-53a: 3 - 5: 75 - 10
RATED OPERATIONAL CURRENT (IE) AT AC-53	16 A
RATED OPERATIONAL VOLTAGE (UE) - MAX	480 V
RATED OPERATIONAL VOLTAGE (UE) - MIN	230 V
SHORT-CIRCUIT PROTECTION RATING	3 x 170M1364, Type „2“ coordination (additional with the fuses for coordination type „1“), Main conducting paths PKM0-16 (+ CL-PKZ0), Type “1” coordination, 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	5 HP
ASSIGNED MOTOR POWER AT 220/230 V, 60 HZ, 3-PHASE	5 HP
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE	10 HP
RATED OPERATIONAL POWER AT 220/230 V, 50 HZ	4 kW
RATED OPERATIONAL POWER AT 400 V, 50 HZ	7.5 kW

Terminal capacities

TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	2 x (0.5 - 0.75) mm², Control circuit cables 2 x (0.75 - 10) mm², Main cables 1 x (0.5 - 1.5) mm², Control circuit cables 1 x (0.75 - 16) mm², Main cables
TERMINAL CAPACITY (SOLID)	1 x (0.5 - 2.5) mm², Control circuit cables 1 x (0.75 - 16) mm², Main cables 2 x (0.75 - 10) mm², Main cables 2 x (0.5 - 1.0) mm², Control circuit cables
TERMINAL CAPACITY (SOLID/STRANDED AWG)	18 - 14, Control circuit cables 18 - 6, Main cables
TERMINAL CAPACITY (STRANDED)	1 x 16 mm², Main cables
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
TIGHTENING TORQUE	1.2 Nm, Screw terminals, Control circuit cables 3.2 Nm

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
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN	0 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN	0 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX	0 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN	0 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 %) or via SmartWire-DT 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
CURRENT LIMITATION	(0 - 8) x Ie, 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

Design verification

EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	0.8 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	16 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	0.8 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-softstarter-ds7-dimensions.eps eaton-semiconductor-contactors-softstarter-ds7-3d-drawing-004.eps
ECAD MODEL	DA-CE-ETN.DS7-34DSX016N0-D
INSTALLATION INSTRUCTIONS	IL03902004Z2021_06.pdf
INSTALLATION VIDEOS	Soft starter DS7 up to 32 A
MANUALS AND USER GUIDES	MN05006002Z_EN eaton-ds7-soft-starter-mn03901001z-en-us.pdf
MCAD MODEL	DA-CS-ds7_2_darwin_100309 DA-CD-ds7_2_darwin_100309
SALES NOTES	eaton-rmq-chemical-resistance-flyer-fl047011en-en-us.pdf

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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