

# Specifications



## Eaton 134943

Eaton DS7 Soft starter, 4 A, 200 - 480 V AC, 24 V DC, Frame size: FS1, Communication Interfaces: SmartWire-DT

### General specifications

<b>PRODUCT NAME</b>	Eaton DS7 Soft starter
<b>CATALOG NUMBER</b>	134943
<b>MODEL CODE</b>	DS7-34DSX004N0-D
<b>EAN</b>	4015081317585
<b>PRODUCT LENGTH/DEPTH</b>	103 mm
<b>PRODUCT HEIGHT</b>	130 mm
<b>PRODUCT WIDTH</b>	45 mm
<b>PRODUCT WEIGHT</b>	0.35 kg
<b>COMPLIANCES</b>	CE Marked
<b>CERTIFICATIONS</b>	<ul style="list-style-type: none"> <li>UL 508</li> <li>EN 60947-4-2</li> <li>CSA Std. C22.2 No. 0-M91</li> <li>CSA Std. C22.2 No. 14-05</li> <li>IEC 60947-4-2</li> <li>C-Tick</li> <li>CSA22.2-14</li> <li>CSA-C22.2 No 0-M91</li> <li>CSA</li> <li>UkrSEPRO</li> <li>GB 14048.6</li> <li>UL</li> <li>IEC/EN 60947-4-2</li> <li>CE</li> <li>CSA-C22.2 No 14-05</li> </ul>
<b>GLOBAL CATALOG</b>	134943

## Product specifications

<b>AMPERAGE RATING</b>	4A
<b>PHASE</b>	Three-phase
<b>TYPE</b>	Soft starter for three-phase loads
<b>VOLTAGE RATING</b>	200-480 V
<b>10.10 TEMPERATURE RISE</b>	The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
<b>10.11 SHORT-CIRCUIT RATING</b>	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
<b>10.12 ELECTROMAGNETIC COMPATIBILITY</b>	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
<b>10.13 MECHANICAL FUNCTION</b>	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.
<b>10.2.2 CORROSION RESISTANCE</b>	Meets the product standard's requirements.
<b>10.2.3.1 VERIFICATION OF THERMAL STABILITY OF ENCLOSURES</b>	Meets the product standard's requirements.
<b>10.2.3.2 VERIFICATION OF RESISTANCE OF INSULATING MATERIALS TO NORMAL HEAT</b>	Meets the product standard's requirements.
<b>10.2.3.3 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. EFFECTS</b>	Meets the product standard's requirements.
<b>10.2.4 RESISTANCE TO ULTRA-VIOLET (UV) RADIATION</b>	Meets the product standard's requirements.
<b>10.2.5 LIFTING</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.2.6 MECHANICAL IMPACT</b>	Does not apply, since the entire switchgear needs to be evaluated.

## Resources

<b>BROCHURES</b>	<a href="#">eaton-softstarter-s811-ds7-brochure-br039001en-en-us.pdf</a>
<b>CATALOGS</b>	<a href="#">Product Range Catalog Drives Engineering</a>
<b>DECLARATIONS OF CONFORMITY</b>	<a href="#">DA-DC-00003978.pdf</a> <a href="#">DA-DC-00004193.pdf</a>
<b>DRAWINGS</b>	<a href="#">eaton-semiconductor-contactors-swd-ds7-soft-starter-dimensions-004.eps</a> <a href="#">eaton-semiconductor-contactors-softstarter-ds7-3d-drawing-002.eps</a>
<b>ECAD MODEL</b>	<a href="#">DA-CE-ETN.DS7-34DSX004N0-D</a>
<b>INSTALLATION INSTRUCTIONS</b>	<a href="#">IL03902003Z2021_06.pdf</a>
<b>INSTALLATION VIDEOS</b>	<a href="#">Soft starter DS7 up to 32 A</a>
<b>MANUALS AND USER GUIDES</b>	<a href="#">eaton-ds7-soft-starter-mn03901001z-en-us.pdf</a> <a href="#">MN05006002Z_EN</a>
<b>MCAD MODEL</b>	<a href="#">DA-CD-ds7_1_darwin_100309</a> <a href="#">DA-CS-ds7_1_darwin_100309</a>
<b>SALES NOTES</b>	<a href="#">eaton-rmq-chemical-resistance-flyer-fl047011en-en-us.pdf</a>

<b>10.2.7 INSCRIPTIONS</b>	Meets the product standard's requirements.
<b>10.3 DEGREE OF PROTECTION OF ASSEMBLIES</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.4 CLEARANCES AND CREEPAGE DISTANCES</b>	Meets the product standard's requirements.
<b>10.5 PROTECTION AGAINST ELECTRIC SHOCK</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.6 INCORPORATION OF SWITCHING DEVICES AND COMPONENTS</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.7 INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS</b>	Is the panel builder's responsibility.
<b>10.8 CONNECTIONS FOR EXTERNAL CONDUCTORS</b>	Is the panel builder's responsibility.
<b>10.9.2 POWER-FREQUENCY ELECTRIC STRENGTH</b>	Is the panel builder's responsibility.
<b>10.9.3 IMPULSE WITHSTAND VOLTAGE</b>	Is the panel builder's responsibility.
<b>10.9.4 TESTING OF ENCLOSURES MADE OF INSULATING MATERIAL</b>	Is the panel builder's responsibility.
<b>FITTED WITH:</b>	Internal bypass Internal bypass contacts
<b>FREQUENCY RATING</b>	50-60 Hz
<b>POLLUTION DEGREE</b>	2
<b>CLASS</b>	Other
<b>CLIMATIC PROOFING</b>	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-3
<b>CONNECTION TO SMARTWIRE-DT</b>	Yes
<b>FRAME SIZE</b>	FS1
<b>ALTITUDE</b>	Max. 2000 m Above 1000 m with 1 % derating per 100 m
<b>AMBIENT OPERATING TEMPERATURE - MAX</b>	40 °C
<b>AMBIENT OPERATING TEMPERATURE - MIN</b>	-5 °C
<b>AMBIENT STORAGE TEMPERATURE - MAX</b>	60 °C
<b>AMBIENT STORAGE</b>	-25 °C

<b>TEMPERATURE - MIN</b>	
<b>ASSIGNED MOTOR POWER AT 200/208 V, 60 HZ, 3-PHASE</b>	0.75 HP
<b>ASSIGNED MOTOR POWER AT 220/230 V, 60 HZ, 3-PHASE</b>	1 HP
<b>ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE</b>	2 HP
<b>EQUIPMENT HEAT DISSIPATION, CURRENT- DEPENDENT PVID</b>	0.2 W
<b>HEAT DISSIPATION CAPACITY PDISS</b>	0 W
<b>HEAT DISSIPATION PER POLE, CURRENT- DEPENDENT PVID</b>	0 W
<b>MAINS VOLTAGE - MAX</b>	480 V
<b>MAINS VOLTAGE - MIN</b>	200 V
<b>OPERATING TEMPERATURE - MAX</b>	40 °C
<b>OUTPUT VOLTAGE</b>	24 V DC
<b>NUMBER OF OUTPUTS</b>	1 Relay Output (TOR)
<b>SCREWDRIVER SIZE</b>	0.6 x 5.5 mm/1 x 6 mm, Terminal screws, Control circuit cables PZ2, 1 x 6 mm, Terminal screw, Standard screwdriver
<b>VOLTAGE TYPE</b>	DC
<b>RATED OPERATIONAL VOLTAGE (UE) - MIN</b>	230 V
<b>RATED POWER THREE- PHASE MOTOR, INLINE, AT 230 V</b>	0.75 kW
<b>RATED POWER THREE- PHASE MOTOR, INLINE, AT 400 V</b>	1.5 kW
<b>RATED POWER THREE- PHASE MOTOR, INSIDE DELTA, AT 230 V</b>	0 kW
<b>RATED POWER THREE- PHASE MOTOR, INSIDE DELTA, AT 400 V</b>	0 kW
<b>STATIC HEAT DISSIPATION, NON- CURRENT-DEPENDENT PVS</b>	0.2 W

<b>VOLTAGE RATING - MAX</b>	480 V
<b>APPLICATION</b>	<ul style="list-style-type: none"> <li>• 1-phase motors: No</li> <li>• 3-phase motors: Yes</li> <li>• Soft starting of three-phase asynchronous motors</li> </ul>
<b>PRODUCT CATEGORY</b>	SmartWire-DT slave
<b>PROTECTION</b>	Finger and back-of-hand proof, Protection against direct contact
<b>MOUNTING POSITION</b>	Vertical
<b>DROP-OUT VOLTAGE</b>	0 - 3 V, DC operated
<b>OVERVOLTAGE CATEGORY</b>	II
<b>DEGREE OF PROTECTION</b>	IP20 NEMA 1
<b>CURRENT CONSUMPTION</b>	1.6 mA, Control circuit, Digital inputs, External 24 V 50 mA, Control circuit, Regulator supply
<b>CURRENT LIMITATION</b>	(0 - 8) x I <sub>e</sub> , Soft start function
<b>FUNCTIONS</b>	Suppression of closing transients Single direction Suppression of DC components for motors Current limitation, with PKE Potential isolation between power and control sections Min. ramp time 1 s - fast switching (semiconductor contactor) Soft start function
<b>DELAY TIME</b>	0 - 30 s, Soft start function, Ramp times
<b>OVERLOAD CYCLE</b>	AC-53a: 3 - 5: 75 - 10
<b>DROP-OUT TIME</b>	350 ms, Control circuit, Digital Inputs, DC operated
<b>PICK-UP VOLTAGE</b>	17.3 - 27 V DC
<b>RADIO INTERFERENCE CLASS</b>	Class B (EN 55011)

<b>FAULT MEMORY</b>	8 Faults
<b>PICK-UP TIME</b>	250 ms at DC
<b>INTERFACES</b>	SmartWire-DT (built-in)
<b>RATED CONTROL VOLTAGE (UC)</b>	24 V DC (-15 %/+10 %) or via SmartWire-DT 24 V DC
<b>SUPPLY FREQUENCY</b>	50/60 Hz, fLN, Main circuit
<b>OPERATING TEMPERATURE - MIN</b>	-5 °C
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX</b>	0 V
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN</b>	0 V
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX</b>	0 V
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN</b>	0 V
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX</b>	24 V
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MIN</b>	24 V
<b>RATED OPERATIONAL CURRENT (IE) AT AC-11</b>	1 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-53</b>	4 A
<b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b>	4 A
<b>RATED OPERATIONAL POWER AT 220/230 V, 50 HZ</b>	0.75 kW
<b>RATED OPERATIONAL POWER AT 400 V, 50 HZ</b>	1.5 kW
<b>RATED OPERATIONAL VOLTAGE (UE) - MAX</b>	480 V
<b>VIBRATION RESISTANCE</b>	2M2 to EN 60721-3-2
<b>RAMP/RUN-UP TIME</b>	1 - 30 s
<b>SHOCK RESISTANCE</b>	8 g, 11 ms, Mechanical
<b>SUITABLE FOR</b>	Branch circuits, (UL/CSA)
<b>TIGHTENING TORQUE</b>	1.2 Nm 1.2 Nm, Screw terminals, Control circuit cables

<b>SHORT-CIRCUIT PROTECTION RATING</b>	PKM0-4 (+ CL-PKZ0), Type "1" coordination, Main conducting paths 3 x 170M1359, Type „2“ coordination (additional with the fuses for coordination type „1“), Main conducting paths
<b>START VOLTAGE</b>	Min. 30 %, Soft start function, Start voltage = turn-off voltage Max. 100 %, Soft start function, Start voltage = turn-off voltage
<b>TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)</b>	2 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables 1 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables 1 x (0.75 - 2.5) mm <sup>2</sup> , Main cables 2 x (0.75 - 2.5) mm <sup>2</sup> , Main cables
<b>TERMINAL CAPACITY (SOLID)</b>	1 x (0.75 - 4) mm <sup>2</sup> , Control circuit cables 1 x (0.75 - 4) mm <sup>2</sup> , Main cables 2 x (0.75 - 2.5) mm <sup>2</sup> , Main cables 2 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables
<b>TERMINAL CAPACITY (SOLID/STRANDED AWG)</b>	18 - 10, Main cables 18 - 10, Control circuit cables

**PROJECT NAME:**

**PROJECT NUMBER:**

**PREPARED BY:**

**DATE:**



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