### DATASHEET - DS7-34DSX004N0-D



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



Part no.DS7-34DSX004N0-DCatalog No.134943Alternate CatalogDS7-34DSX004N0-DNo.EL-NummerChorway)0004137332

### **Delivery program**

Product range			SmartWire-DT slave
Subrange			SmartWire-DT Soft starters
Description			With internal bypass contacts
Function			Soft starters for three-phase loads
Mains supply voltage (50/60 Hz)	U <sub>LN</sub>	V AC	200 - 480
Supply voltage	Us		24 V DC
Control voltage	U <sub>C</sub>		24 V DC
Assigned motor rating (Standard connection, In-Line)			
at 400 V, 50 Hz	Р	kW	1.5
at 460 V, 60 Hz	Ρ	HP	2
Rated operational current			
AC-53	I <sub>e</sub>	А	4
Rated operational voltage	U <sub>e</sub>		200 V 230 V 400 V 480 V
Connection to SmartWire-DT			yes
Frame size			FS1

# Technical data

General			
Standards			IEC/EN 60947-4-2 UL 508 CSA22.2-14
Approvals			CE
Approvals			UL CSA C-Tick UkrSEPRO
Climatic proofing			Damp heat, constant, to IEC 60068-2-3 Damp heat, cyclic, to IEC 60068-2-10
Ambient temperature			
Operation	9	°C	-5 - +40 up to 60 at 2% derating per Kelvin temperature rise
Storage	θ	°C	-25 - +60
Altitude		m	0 - 1000 m, above that 1 $\%$ derating per 100 m , up to 2000 m
Mounting position			Vertical
Degree of protection			
Degree of Protection			IP20
Protection against direct contact			Finger- and back-of-hand proof
Overvoltage category/pollution degree			11/2
Shock resistance			8 g/11 ms
Vibration resistance to EN 60721-3-2			2M2
Radio interference level (IEC/EN 55011)			В
Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	0.2
Weight		kg	0.41
Main conducting paths			
Rated operating voltage	Ue	V AC	200 - 480

Currents for any second	t.	11-	F0/20
Supply frequency	f <sub>LN</sub>	Hz	50/60
Rated operational current	le	A	
AC-53	l <sub>e</sub>	A	4
Assigned motor rating (Standard connection, In-Line)			
at 230 V, 50 Hz	Р	kW	0.75
at 400 V, 50 Hz	Р	kW	1.5
at 200 V, 60 Hz	Р	HP	0.75
at 230 V, 60 Hz	Р	HP	1
at 460 V, 60 Hz	Р	HP	2
Overload cycle to IEC/EN 60947-4-2			
AC-53a			4 A: AC-53a: 3 - 5: 75 - 10
Internal bypass contacts			1
Short-circuit rating			
Type "1" coordination			PKM0-4 (+ CL-PKZ0)
Type "2" coordination (additional with the fuses for coordination type "1")			3 x 170M1359
Fuse base (number x part no.)			3 x 170H1007
Terminal capacities			
Cable lengths			
Solid		mm <sup>2</sup>	1 x (0.75 - 4) 2 x (0.75 - 2.5)
Flexible with ferrule		mm <sup>2</sup>	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Solid or stranded		AWG	18 - 10
Tightening torque		Nm	1.2
Screwdriver (PZ: Pozidriv)		mm	PZ2; 1 x 6 mm
Control cables			
Solid		mm <sup>2</sup>	1 x (0.75 - 4) 2 x (0.75 - 2.5)
Flexible with ferrule		mm <sup>2</sup>	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Solid or stranded		AWG	18 - 10
Tightening torque		Nm	1.2
Screwdriver		mm	0,8 x 5,5 1 x 6
Control circuit			
Digital inputs			
Control voltage			
DC-operated		V DC	24 V DC +10 %/- 15 % oder über SWD
Current consumption 24 V		mA	
External 24 V		mA	1.6
Pick-up voltage		x U <sub>s</sub>	
DC-operated		V DC	17.3 - 27
Drop-out voltage	x U <sub>s</sub>		
DC operated		V DC	0 - 3
Pick-up time			
DC operated		ms	250
Drop-out time			
DC operated		ms	350
Regulator supply			
Voltage	Us	V	24 V DC +10 %/- 15 %
Current consumption			50
	l <sub>e</sub>	mA	
Notes			External supply voltage
Relay outputs			1/TOD)
Number		14.4.0	1 (TOR)
Voltage range		V AC	= U <sub>s</sub>
AC-11 current range		А	1 A, AC-11

#### Soft start function

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Rated impulse withstand voltage:

1.2 μs/50 μs (rise time/fall time of the pulse to IEC/EN 60947-2 or -3)
Applies for control circuit/power section/enclosure

## Design verification as per IEC/EN 61439

Rated operational current for specified heat dissipationInA4Heat dissipation per pole, current-dependentPvidW0Equipment heat dissipation, current-dependentPvidW0.2Static heat dissipation, non-current-dependentPvsW0.2Heat dissipation capacityPdissW0.2Operating ambient temperature min.°C-5Operating ambient temperature max.V°C	;			
Heat dissipation per pole, current-dependentParade<	Technical data for design verification			
Ration         Part         <	Rated operational current for specified heat dissipation	In	А	4
Static heat dissipation, on-current-dependent         Pers         We         0           Beta dissipation, con-current-dependent         Pers         We         0           Operating ambient temperature min.         C         -5           Operating ambient temperature max.         C         -0           102.5 trength of materials and parts         C         -0           102.2 Corrosion resistance         Mess the product standard's requirements.         Mess the product standard's requirements.           102.3.1 Verification of thermal stability of enclosures         Mess the product standard's requirements.         Mess the product standard's requirements.           102.3.2.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects         Mess the product standard's requirements.           102.3.2 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects         Mess the product standard's requirements.           102.3.2 Verification of resistance of insulating materials to abnormal heat in the due to internal electric effects         Mess the product standard's requirements.           102.2.1 Verification of resistance of insulating materials to abnormal heat in the due to internal electric effects         Mess the product standard's requirements.           102.5 Protection against electric shock         Mess the product standard's requirements.         Mess the product standard's requirements. <td>Heat dissipation per pole, current-dependent</td> <td>P<sub>vid</sub></td> <td>W</td> <td>0</td>	Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0
Heat dissipation capacityPrisonP	Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	0.2
Operating ambient temperature min.         *	Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	0.2
Operating ambient temperature max.         Particular of the second	Heat dissipation capacity	P <sub>diss</sub>	W	0
EEC/EN 61439 design verification102.Strength of materials and parts102.Strength of materials and parts102.2 Corrosion resistance102.3.1 Verification of thermal stability of enclosures102.3.2 Verification of resistance of insulating materials to normal heat102.3.3 Verification of resistance of insulating materials to abnormal heat102.4 Resistance to ultra-violet (UV) radiation102.5 Lifting102.5 Lifting102.5 Des not apply, since the entire switchgear needs to be evaluated.102.7 Inscriptions103.Degree of protection of ASSEMBLIES105.Protection against electric shock105.Protection against electric shock105.Protection against electric shock105.Protection of switching devices and components105.Protection of soverthing devices and components105.Protection approperties107.Internal electric al circuits and connections108.Connections for external conductors109.Insulation properties109.Power-frequency electric strength109.Power-frequency electric strength	Operating ambient temperature min.		°C	-5
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10.9.2 Power-frequency electric strength Is the panel builder's responsibility.	10.8 Connections for external conductors			Is the panel builder's responsibility.
	10.9 Insulation properties			
10.9.3 Impulse withstand voltage	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.

## **Technical data ETIM 7.0**

Low-voltage industrial components (EG000017) / Soft starter (EC000640)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Load breakout, motor breakout / Semiconductor motor controller or soft starter (ecl@ss10.0.1-27-37-09-07 [AC0300011])			
Rated operation current le  at 40 °C Tu	А		4
Rated operating voltage Ue	V		230 - 460
Rated power three-phase motor, inline, at 230 V	kV	N	0.75
Rated power three-phase motor, inline, at 400 V	kV	N	1.5
Rated power three-phase motor, inside delta, at 230 V	kV	N	0
Rated power three-phase motor, inside delta, at 400 V	kV	N	0
Function			Single direction
Internal bypass			Yes
With display			No
Torque control			No
Rated surrounding temperature without derating	°C	0	40
Rated control supply voltage Us at AC 50HZ	V		0 - 0
Rated control supply voltage Us at AC 60HZ	V		0 - 0
Rated control supply voltage Us at DC	V		24 - 24
Voltage type for actuating			DC
Integrated motor overload protection			No
Release class			Other
Degree of protection (IP)			IP20
Degree of protection (NEMA)			1

## Approvals

Product Standards	IEC/EN 60947-4-2; GB 14048.6; UL 508; CSA-C22.2 No 0-M91; CSA-C22.2 No 14-05 CE marking
Specially designed for North America	No
Suitable for	Branch circuits
Current Limiting Circuit-Breaker	No
Max. Voltage Rating	480 V
Degree of Protection	IP20; UL/CSA Type 1



