DATASHEET - DS7-34DSX070N0-D



Soft starter, 70 A, 200 - 480 V AC, 24 V DC, Frame size: FS3, Communication Interfaces: SmartWire-DT $\,$

DS7-34DSX070N0-D

FATON'

Powering Business Worldwide

6

Part no. DS7-34DSX070N0-D Catalog No. 134954

Alternate Catalog No.

EL-Nummer 0004137341

(Norway)

Delivery program

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_{LN}	V AC	200 - 480
Supply voltage	U_s		24 V DC
Control voltage	U _C		24 V DC
Assigned motor rating (Standard connection, In-Line)			
at 400 V, 50 Hz	P	kW	37
at 460 V, 60 Hz	P	HP	50
Rated operational current			
AC-53	l _e	Α	70
Rated operational voltage	U _e		200 V 230 V 400 V 480 V
Connection to SmartWire-DT			yes
Frame size			FS3

Technical data

Conora

Static heat dissipation, non-current-dependent Page 1988 CSA22-14	General			
Approvals Approvals Climatic proofing Climatic proofing Ambient temperature Operation	Standards			UL 508
Climatic proofing Climatic proofing Ambient temperature Operation Operation Storage Altitude Mounting position Degree of protection Degree of Protection Integrated Protection against direct contact Overvoltage category/pollution degree Vibration resistance to EN 60721-3-2 Radio interference level (IEC/EN 55011) Storage Radio interference level (IEC/EN 55011) Pown Pub C 25 - 40 up to 60 at 2% derating per Kelvin temperature rise C - 25 - 40 up to 60 at 2% derating per Kelvin temperature rise P - 25 - 40 up to 60 at 2% derating per 100 m, up to 2000 m Vertical Protection n, above that 1 % derating per 100 m, up to 2000 m Protection type IP40 can be achieved on all sides with covers from the NZM range. Finger- and back-of-hand proof Il/2 8 g/11 ms 2 M2 Radio interference level (IEC/EN 55011) B Static heat dissipation, non-current-dependent Pvs W 13	Approvals			CE
Depration Operation Storage Altitude Mounting position Degree of protection Degree of Protection Integrated Protection against direct contact Overvoltage category/pollution degree Overvoltage category/pollution degree Shock resistance Vibration resistance to EN 60721-3-2 Radio interference level (IEC/EN 55011) Demp heat, cyclic, to IEC 60068-2-10 Damp heat, cyclic, to IEC 60068-2-10 Damp heat, cyclic, to IEC 60068-2-10 Damp heat, cyclic, to IEC 60068-2-10 Demp heat, cyclic, to IEC 60068-2-10 Dep ded 2-440 Depred of 2-440 Depred of 2-440 Depred of 2-440 Depred of 2-460 Depred of 2-46	Approvals			CSA C-Tick
Operation 8 C -5 - +40 up to 60 at 2% derating per Kelvin temperature rise Storage 8 C -25 - +60 Altitude Mounting position Degree of protection Degree of Protection Integrated Protection against direct contact Overvoltage category/pollution degree Vibration resistance to EN 60721-3-2 Radio interference level (IEC/EN 55011) 8 C -25 - +60 Vertical Vertical Poly (terminals IP00) IP20 (terminals IP00) Finger- and back-of-hand proof II/2 8 g/11 ms 2 M2 Radio interference level (IEC/EN 55011) Pys W 13	Climatic proofing			
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Altitude m 0 - 1000 m, above that 1 % derating per 100 m, up to 2000 m Mounting position Vertical Degree of protection	Operation	9	°C	
Mounting position Degree of protection Degree of Protection Degree of Protection Integrated Protection against direct contact Overvoltage category/pollution degree Vibration resistance Vibration resistance to EN 60721-3-2 Radio interference level (IEC/EN 55011) Vertical Vertical Vertical Vertical Vertical Vertical Vertical Protection type IP40 can be achieved on all sides with covers from the NZM range. Finger- and back-of-hand proof II/2 8 g/11 ms Vibration resistance to EN 60721-3-2 Radio interference level (IEC/EN 55011) B Static heat dissipation, non-current-dependent Pvs W 13	Storage	θ	°C	-25 - +60
Degree of protection Degree of Protection Integrated Protection against direct contact Overvoltage category/pollution degree Vibration resistance to EN 60721-3-2 Radio interference level (IEC/EN 55011) Static heat dissipation, non-current-dependent Pegree of Protection IP20 (terminals IP00) Protection type IP40 can be achieved on all sides with covers from the NZM range. Finger- and back-of-hand proof II/2 8 g/11 ms 2M2 AM2 Shock resistance to EN 60721-3-2 Radio interference level (IEC/EN 55011) B Static heat dissipation, non-current-dependent	Altitude		m	0 - 1000 m, above that 1 % derating per 100 m , up to 2000 m $$
Degree of Protection Integrated Protection against direct contact Overvoltage category/pollution degree Vibration resistance to EN 60721-3-2 Radio interference level (IEC/EN 55011) Protection against direct contact Protection against direct contact Protection against direct contact Protection against direct contact Protection type IP40 can be achieved on all sides with covers from the NZM range. Finger- and back-of-hand proof II/2 8 g/11 ms 2M2 Radio interference level (IEC/EN 55011) B Static heat dissipation, non-current-dependent Pvs W 13	Mounting position			Vertical
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Protection against direct contact Overvoltage category/pollution degree Shock resistance Vibration resistance to EN 60721-3-2 Radio interference level (IEC/EN 55011) Static heat dissipation, non-current-dependent Pvs While Finger- and back-of-hand proof II/2 8 g/11 ms 2M2 8 g/11 ms 1 ms 2 mg 2 mg 3 mg 4 mg	Degree of Protection			IP20 (terminals IP00)
Overvoltage category/pollution degree II/2 Shock resistance 8 g/11 ms Vibration resistance to EN 60721-3-2 Radio interference level (IEC/EN 55011) B Static heat dissipation, non-current-dependent Pvs W 13	Integrated			Protection type IP40 can be achieved on all sides with covers from the NZM range.
Shock resistance 8 g/11 ms Vibration resistance to EN 60721-3-2 Radio interference level (IEC/EN 55011) Static heat dissipation, non-current-dependent P _{vs} W 13	Protection against direct contact			Finger- and back-of-hand proof
Vibration resistance to EN 60721-3-2 Radio interference level (IEC/EN 55011) Static heat dissipation, non-current-dependent P _{vs} W 13	Overvoltage category/pollution degree			11/2
Radio interference level (IEC/EN 55011) Static heat dissipation, non-current-dependent P _{vs} W 13	Shock resistance			8 g/11 ms
Static heat dissipation, non-current-dependent P _{vs} W 13	Vibration resistance to EN 60721-3-2			2M2
	Radio interference level (IEC/EN 55011)			В
Weight kg 1.8	Static heat dissipation, non-current-dependent	P_{vs}	W	13
	Weight		kg	1.8

Main conducting paths		V • 6	000, 400
Rated operating voltage	U _e	V AC	200 - 480
Supply frequency	f _{LN}	Hz	50/60
Rated operational current	l _e	Α	
AC-53	I _e	Α	70
Assigned motor rating (Standard connection, In-Line)			
at 230 V, 50 Hz	P	kW	15
at 400 V, 50 Hz	P	kW	37
at 200 V, 60 Hz	P	HP	20
at 230 V, 60 Hz	P	HP	25
at 460 V, 60 Hz	P	HP	50
Overload cycle to IEC/EN 60947-4-2			
AC-53a			68 A: AC-53a: 3 - 5: 75 - 10
Internal bypass contacts			✓
Short-circuit rating			
Type "1" coordination			NZMN1-M80
Type "2" coordination (additional with the fuses for coordination type "1")			3 x 170M4008
Fuse base (number x part no.)			3 x 170H3004
Terminal capacities			
Cable lengths			
Solid		mm^2	1 x (25 - 70) 2 x (6 - 25)
Stranded		2	1 x (25 - 70)
Stratited		mm ²	2 x (6 - 25)
Solid or stranded		AWG	1 x (12 - 2/0)
Copper band		MM	2 x 9 x 0.8 9 x 9 x 0.8
Tightening torque		Nm	6 (≤ 10 mm²); 9 (> 10 mm²)
Screwdriver (PZ: Pozidriv)		mm	PZ2; 1 x 6 mm
Control cables			
Solid		mm^2	1 x (0.5 - 2.5)
F1 71 21 4			2 x (0.5 - 1.0)
Flexible with ferrule		mm ²	1 x (0.5 - 1.5) 2 x (0.5 - 0.75)
Stranded		mm ²	1 x (0.5 - 1.5)
			2 x (0.5 - 1.0)
Solid or stranded		AWG	1 x (21 - 14) 2 x (21 - 18)
Tightening torque		Nm	0.4
Screwdriver		mm	0,6 x 3,5
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 _s	
DC-operated		V DC	17.3 - 27
Drop-out voltage	x U _s		
DC operated		V DC	0 - 3
Pick-up time			
DC operated		ms	250
Drop-out time			
DC operated		ms	350
Regulator supply			
Voltage	U _s	V	24 V DC +10 %/- 15 %
- · •	- 5	•	

mA

A/ms

50

0,6/50

 I_{e}

Current consumption

Current consumption at peak performance (close bypass) at 24 V DC $\,$

Notes		External supply voltage
Relay outputs		
Number		2 (TOR, Ready)
Voltage range	V AC	250
AC-11 current range	А	1 A, AC-11
Soft start function		
Ramp times		
Acceleration	s	1 - 30
Deceleration	s	0 - 30
Start voltage (= turn-off voltage)	%	30 100
Start pedestal	%	30 - 100
Current limitation		(0 - 8) x I _e
Fields of application		
Fields of application		Soft starting of three-phase asynchronous motors
1-phase motors		•
3-phase motors		✓
Functions		
Fast switching (semiconductor contactor)		- (minimum ramp time 1s)
Soft start function		✓
Reversing starter		External solution required
Suppression of closing transients		/
Current limitation		●, with PKE
Fault memory	Faults	8
Suppression of DC components for motors		/
Potential isolation between power and control sections		✓

Notes

Rated impulse withstand voltage:

- 1.2 μ s/50 μ s (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 dissipation In A 70 Heat dissipation per pole, current-dependent Pvid W 13 Static heat dissipation, non-current-dependent Pvid W 13 Static heat dissipation, non-current-dependent Pvid W 13 Heat dissipation capacity Pdiss W 13 Operating ambient temperature min. Pdiss W 0 Operating ambient temperature max. Pdiss W 10 Operating ambient temperature max. Pdiss W 10 IEC/EN 61439 design verification 10.2 Strength of materials and parts Meets the product standard's requirements. 10.2.3.1 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects 10.2.3.1 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects Meets the product standard's requirements. Does not apply, since the entire switchgear needs to be evaluated. Neets the product standard's requirements. Meets the product standard's requirements. Does not apply, since the entire switchgear needs to be evaluated. Meets the product standard's requirements. Does not apply, since the entire switchgear needs to be evaluated. Meets the product standard's requirements. Does not apply, since the entire switchgear needs to be evaluated. Meets the product standard's requirements.	3			
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Equipment heat dissipation, current-dependent Pvid W 13 Static heat dissipation, non-current-dependent Pvs W 13 Heat dissipation, non-current-dependent Pdiss W 0 Operating ambient temperature min. Operating ambient temperature max. C -5 Operating ambient temperature max. IEC/EN 61439 design verification 10.2 Strength of materials and parts 10.2.2 Corrosion resistance 10.2.3.1 Verification of thermal stability of enclosures 10.2.3.2 Verification of tresistance of insulating materials to normal heat and fire due to internal electric effects 10.2.4 Resistance to ultra-violet (UV) radiation 10.2.5 Lifting 10.2.6 Mechanical impact 10.2.7 Inscriptions 10.3 Degree of protection of ASSEMBLIES 10.4 Clearances and creepage distances 10.5 Protection against electric shock V 0 Meets the product standard's requirements. Meets the product standard's requirements. Does not apply, since the entire switchgear needs to be evaluated. Meets the product standard's requirements. Does not apply, since the entire switchgear needs to be evaluated. Meets the product standard's requirements. Does not apply, since the entire switchgear needs to be evaluated. Meets the product standard's requirements. Does not apply, since the entire switchgear needs to be evaluated. Meets the product standard's requirements. Does not apply, since the entire switchgear needs to be evaluated. Meets the product standard's requirements. Does not apply, since the entire switchgear needs to be evaluated. Meets the product standard's requirements. Does not apply, since the entire switchgear needs to be evaluated. Meets the product standard's requirements.	Rated operational current for specified heat dissipation	In	Α	70
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10.5 Protection against electric shock Does not apply, since the entire switchgear needs to be evaluated.	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.
10.6 Incorporation of switching devices and components Does not apply, since the entire switchgear needs to be evaluated.	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 Insulation properties	
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 starte

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 [ACO300011])			
Rated operation current le at 40 °C Tu	Α	70	
Rated operating voltage Ue	V	230 - 460	
Rated power three-phase motor, inline, at 230 V	kW	15	
Rated power three-phase motor, inline, at 400 V	kW	37	
Rated power three-phase motor, inside delta, at 230 V	kW	0	
Rated power three-phase motor, inside delta, at 400 V	kW	0	
Function		Single direction	
Internal bypass		Yes	
With display		No	
Torque control		No	
Rated surrounding temperature without derating	°C	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

Dimensions

