



Soft starter, 3p, 135A, 200-480VAC, us=110/230VAC

**Part no.** DS7-342SX135N0-N  
**Article no.** 134939  
**Catalog No.** DS7-342SX135N0-N

## Delivery program

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	$U_s$		110 - 230 V AC
Control voltage	$U_C$		110 - 230 V AC
<b>Assigned motor rating (Standard connection, In-Line)</b>			
at 400 V, 50 Hz	P	kW	75
at 460 V, 60 Hz	P	HP	100
<b>Rated operational current</b>			
AC-53	$I_e$	A	135
Rated operational voltage	$U_e$		200 V 230 V 400 V 480 V
Connection to SmartWire-DT			no
Frame size			FS4


## 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	$\theta$	°C	-5 - +40 up to 60 at 2% derating per Kelvin temperature rise
Storage	$\theta$	°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 (terminals IP00)
Integrated			Protection type IP40 can be achieved on all sides with covers from the NZM range.
Protection against direct contact			Finger- and back-of-hand proof
Overvoltage category/pollution degree			II/2
Shock resistance			8 g/11 ms
Vibration resistance to EN 60721-3-2			2M2
Radio interference level (IEC/EN 55011)			A
Static heat dissipation, non-current-dependent	$P_{vs}$	W	24
Weight		kg	3.7

### Main conducting paths

Rated operating voltage	$U_e$	V AC	200 - 480
Supply frequency	$f_{LN}$	Hz	50/60
Rated operational current	$I_e$	A	
AC-53	$I_e$	A	135

Assigned motor rating (Standard connection, In-Line)			
at 230 V, 50 Hz	P	kW	30
at 400 V, 50 Hz	P	kW	75
at 200 V, 60 Hz	P	HP	40
at 230 V, 60 Hz	P	HP	50
at 460 V, 60 Hz	P	HP	100
Overload cycle to IEC/EN 60947-4-2			
AC-53a			135 A: AC-53a: 3 - 5: 75 - 10
Internal bypass contacts			
Short-circuit rating			
Type "1" coordination			NZMN2-M160
Type „2“ coordination (additional with the fuses for coordination type „1“)			3 x 170M4010
Fuse base (number x part no.)			
			3 x 170H3004

### Terminal capacities

Cable lengths			
Solid		mm <sup>2</sup>	1 x (4 - 185) 2 x (4 - 70)
Stranded		mm <sup>2</sup>	1 x (4 - 185) 2 x (4 - 70)
Solid or stranded		AWG	1 x (12 - 350 kcmil) 2 x (12 - 00)
Copper band		MM	2 x 9 x 0.8 10 x 16 x 0.8
Tightening torque		Nm	5 (≤ 10 mm <sup>2</sup> ); 14 (> 10 mm <sup>2</sup> )
Screwdriver (PZ: Pozidriv)		mm	PZ2; 1 x 6 mm
Control cables			
Solid		mm <sup>2</sup>	1 x (0.5 - 2.5) 2 x (0.5 - 1.0)
Flexible with ferrule		mm <sup>2</sup>	1 x (0.5 - 1.5) 2 x (0.5 - 0.75)
Stranded		mm <sup>2</sup>	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			
AC operated		V AC	110 V AC - 15 % - 230 V AC +10 %
Current consumption 24 V			
External 24 V		mA	1.6
Current consumption 230 V			
		mA	4
Pick-up voltage			
AC operated		V AC	108 - 253
Drop-out voltage			
AC operated	x U <sub>s</sub>	V AC	0 - 15
Pick-up time			
AC operated		ms	250
Drop-out time			
AC operated		ms	350
Regulator supply			
Voltage	U <sub>s</sub>	V	110 V AC - 15 % - 230 V AC +10 %
Current consumption	I <sub>e</sub>	mA	50
Current consumption at peak performance (close bypass) at 24 V DC	I <sub>Peak</sub>	A/ms	0,6/50
Notes			
			External supply voltage
Relay outputs			
Number			2 (TOR, Ready)

Voltage range	V AC	250
AC-11 current range	A	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
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		✓
Suppression of DC components for motors		✓
Potential isolation between power and control sections		✓

### Notes

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

Technical data for design verification			
Rated operational current for specified heat dissipation	I <sub>n</sub>	A	135
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	24
Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	24
Heat dissipation capacity	P <sub>diss</sub>	W	0
Operating ambient temperature min.		°C	-5
Operating ambient temperature max.		°C	40
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 resistance of insulating materials to normal heat			
10.2.3.3 Verification of resistance of insulating materials to abnormal 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			
10.6 Incorporation of switching devices and components			
10.7 Internal electrical circuits and connections			
10.8 Connections for external conductors			
10.9 Insulation properties			
10.9.2 Power-frequency electric strength			
10.9.3 Impulse withstand voltage			

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.

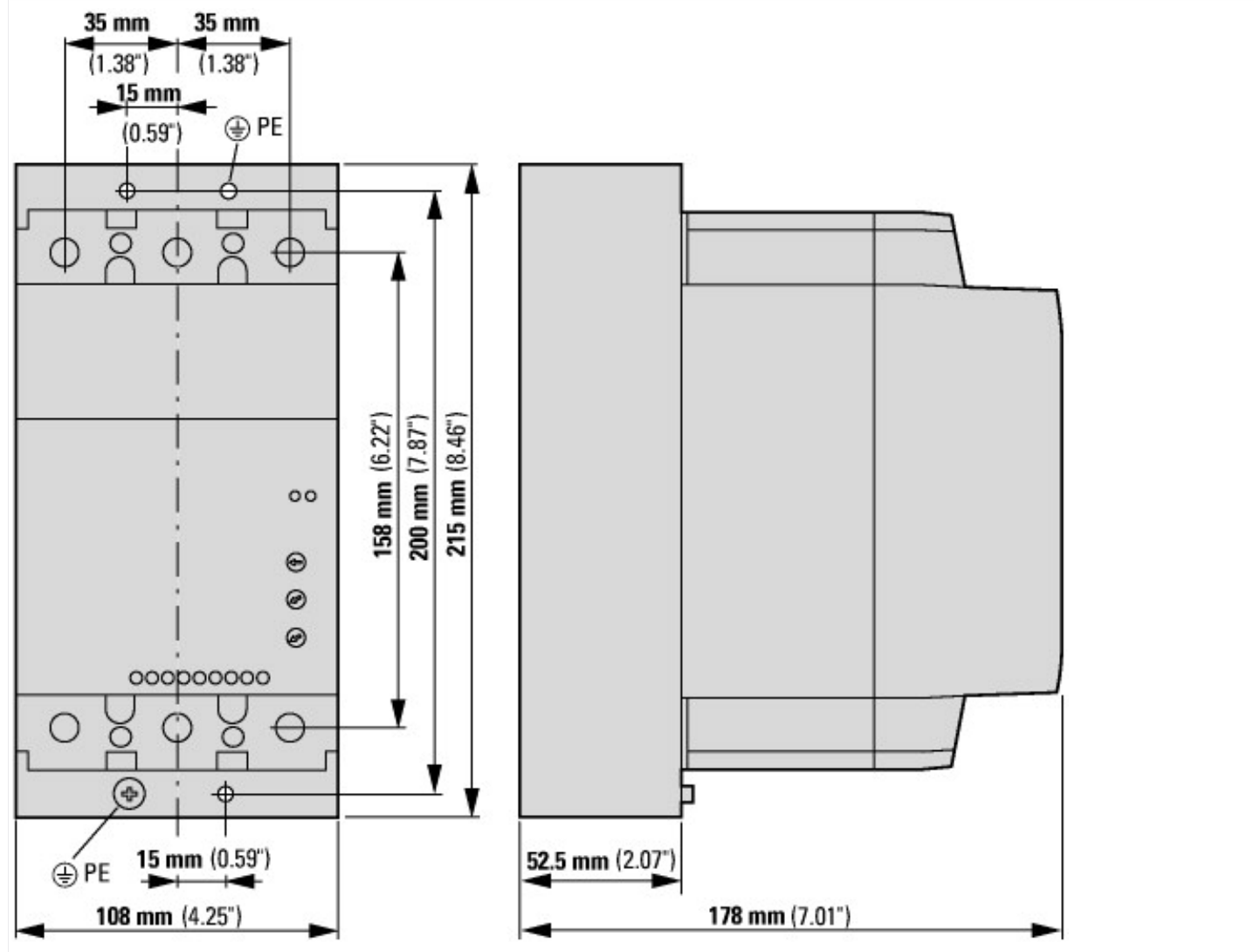
## Technical data ETIM 6.0

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 (ec1@ss8.1-27-37-09-07 [ACO300008])		
Rated operation current I <sub>e</sub> at 40 °C T <sub>u</sub>	A	135
Rated operating voltage U <sub>e</sub>	V	230 - 460
Rated power three-phase motor, inline, at 230 V	kW	30
Rated power three-phase motor, inline, at 400 V	kW	75
Rated power three-phase motor, inside delta, at 230 V	kW	0
Rated power three-phase motor, inside delta, at 400 V	kW	0
Internal bypass		Yes
With display		No
Torque control		No
Rated surrounding temperature without derating	°C	40
Rated control supply voltage U <sub>s</sub> at AC 50HZ	V	110 - 230
Rated control supply voltage U <sub>s</sub> at AC 60HZ	V	110 - 230
Rated control supply voltage U <sub>s</sub> at DC	V	0 - 0
Voltage type for actuating		AC
Integrated motor overload protection		No

## 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
UL File No.		E251034
CSA File No.		2511305
CSA Class No.		321106
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



## Additional product information (links)

### IL03902005Z Instructions for DS7 Soft Starter

IL03902005Z Instructions for DS7 Soft Starter [ftp://ftp.moeller.net/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL03902005Z2012\\_08.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03902005Z2012_08.pdf)

### MN03901001Z Manual DS7 soft starters

MN03901001Z Handbuch Softstarter DS7 - Deutsch [ftp://ftp.moeller.net/DOCUMENTATION/AWB\\_MANUALS/MN03901001Z\\_DE.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN03901001Z_DE.pdf)

MN03901001Z Manual DS7 soft starters - English [ftp://ftp.moeller.net/DOCUMENTATION/AWB\\_MANUALS/MN03901001Z\\_EN.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN03901001Z_EN.pdf)

CA04020001Z\_EN-INT Product range catalog: Efficient Engineering for starting and controlling motors. [http://www.eaton.eu/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct\\_1095238.pdf](http://www.eaton.eu/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct_1095238.pdf)