171742
DS7-340SX009N0-L

DELIVERY PROGRAM

Description
With internal bypass contacts

Function
Soft starters for three-phase loads

Mains supply voltage (50/60 Hz) [U_{LN}]
200 - 480 V AC

Supply voltage [U_S]
24 V AC/DC

Control voltage [U_C]
24 V AC
24 V DC

Assigned motor rating (Standard connection, In-Line)

at 400 V, 50 Hz [P]
4 kW

at 460 V, 60 Hz [P]
5 HP

Rated operational current

AC-53 [I_e]
9 A

Rated operational voltage [U_e]
200 V
230 V
400 V
480 V

Connection to SmartWire-DT
no

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
Cold to EN 60068-2-1

Ambient temperature
Operation [ϑ]
-40 - +40
up to 60 at 2% derating per Kelvin temperature rise
°C

Ambient temperature
Storage [ϑ]
-40 - +60 °C

Altitude
0 - 1000 m, above that 1 % derating per 100 m, up to 2000 mm

Mounting position
Vertical

Degree of protection
Degree of Protection
IP20

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)
B

Static heat dissipation, non-current-dependent [P_{vs}]
0.45 W

Weight
0.44 kg

Main conducting paths

Rated operating voltage [U_e]
200 - 480 V AC

Supply frequency [f_{LN}]
50/60 Hz

Rated operational current [I_e]
AC-53 [I_e]
9 A

Assigned motor rating (Standard connection, In-Line)
at 230 V, 50 Hz [P]
2.2 kW

Assigned motor rating (Standard connection, In-Line)
at 400 V, 50 Hz [P]
4 kW

Assigned motor rating (Standard connection, In-Line)
at 200 V, 60 Hz [P]
2 HP

Assigned motor rating (Standard connection, In-Line)
at 230 V, 60 Hz [P]
3 HP

Assigned motor rating (Standard connection, In-Line)
at 460 V, 60 Hz [P]
5 HP

Overload cycle to IEC/EN 60947-4-2
AC-53a
9 A: AC-53a: 3 - 5: 75 - 10

Overload cycle to IEC/EN 60947-4-2
Internal bypass contacts
☐

Short-circuit rating
Type “1” coordination
PKM0-10 (+ CL-PKZ0)

Short-circuit rating
Type „2“ coordination (additional with the fuses for coordination type „1“)
3 x 170M1362

Fuse base (number x part no.)
3 x 170H1007

Terminal capacities

Cable lengths
Solid
1 x (0.75 - 4)
2 x (0.75 - 2.5) mm²

Cable lengths
Flexible with ferrule
1 x (0.75 - 2.5)
2 x (0.75 - 2.5) mm²

Cable lengths
Solid or stranded
18 - 10 AWG

Cable lengths
Tightening torque
1.2 Nm

Cable lengths
Screwdriver (PZ: Pozidriv)
PZ2; 1 x 6 mm mm

Control cables
Solid
1 x (0.75 - 4)
2 x (0.75 - 2.5) mm²

Control cables
Flexible with ferrule
1 x (0.75 - 2.5)
2 x (0.75 - 2.5) mm²

Control cables
Solid or stranded
18 - 10 AWG

Control cables

Tightening torque
1.2 Nm

Control cables
Screwdriver
0,8 x 5,5

1 x 6 mm

Control circuit

Digital inputs
Control voltage
DC-operated
24 V DC +10 %/- 15 % V DC

Digital inputs
Current consumption 24 V
External 24 V
1.6 mA

Digital inputs
Pick-up voltage
DC-operated
17.3 - 27 V DC

Digital inputs
Pick-up voltage
AC operated
17.3 - 27 V AC

Digital inputs
Drop-out voltage [x U_s]
DC operated
0 - 3 V DC

Digital inputs
Drop-out voltage [x U_s]
AC operated
0 - 3 V AC

Digital inputs
Pick-up time
DC operated
250 ms

Digital inputs
Pick-up time
AC operated
250 ms

Digital inputs
Drop-out time
DC operated
350 ms

Regulator supply
Voltage [U_s]
24 V AC/DC +10 %/- 15 % V

Regulator supply
Current consumption [I_e]
50 mA

Regulator supply
Notes
External supply voltage

Relay outputs
Number
1 (TOR)

Relay outputs
Voltage range
= U_s V AC

Relay outputs
AC-11 current range
1 A, AC-11 A

Soft start function

Ramp times
Acceleration
Ramp time, max.
30 s

Ramp times
Deceleration
0 - 30 s

Start voltage (= turn-off voltage)
30100 %

Start pedestal
30 - 100 %

Fields of application
Fields of application
Soft starting of three-phase asynchronous motors

Fields of application
1-phase motors
●

Fields of application
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
□

DESIGN VERIFICATION AS PER IEC/EN 61439

Technical data for design verification

Rated operational current for specified heat dissipation [I_n]
9 A

Heat dissipation per pole, current-dependent [P_{vid}]

0 W

Equipment heat dissipation, current-dependent
[P_{vid}]
0.45 W

Static heat dissipation, non-current-dependent [P_{vs}]
0.45 W

Heat dissipation capacity [P_{diss}]
0 W

Operating ambient temperature min.
-40 °C

Operating ambient temperature max.
+40 °C

IEC/EN 61439 design verification

10.2 Strength of materials and parts
10.2.2 Corrosion resistance
Meets the product standard's requirements.

10.2 Strength of materials and parts
10.2.3.1 Verification of thermal stability of enclosures
Meets the product standard's requirements.

10.2 Strength of materials and parts
10.2.3.2 Verification of resistance of insulating materials to normal heat
Meets the product standard's requirements.

10.2 Strength of materials and parts
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects
Meets the product standard's requirements.

10.2 Strength of materials and parts
10.2.4 Resistance to ultra-violet (UV) radiation
Meets the product standard's requirements.

10.2 Strength of materials and parts
10.2.5 Lifting
Does not apply, since the entire switchgear needs

to be evaluated.

10.2 Strength of materials and parts
10.2.6 Mechanical impact
Does not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts
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.

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 Insulation properties
10.9.3 Impulse withstand voltage
Is the panel builder's responsibility.

10.9 Insulation properties
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 [ACO300011])

Rated operation current Ie at 40 °C Tu
9 A

Rated operating voltage Ue
230 - 460 V

Rated power three-phase motor, inline, at 230 V
2.2 kW

Rated power three-phase motor, inline, at 400 V
4 kW

Rated power three-phase motor, inside delta, at 230 V
0 kW

Rated power three-phase motor, inside delta, at

400 V
0 kW

Function
Single direction

Internal bypass
Yes

With display
No

Torque control
No

Rated surrounding temperature without derating
40 °C

Rated control supply voltage Us at AC 50HZ
24 - 24 V

Rated control supply voltage Us at AC 60HZ
24 - 24 V

Rated control supply voltage Us at DC
24 - 24 V

Voltage type for actuating
AC/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

UL File No.
E251034

CSA File No.
2511305

CSA Class No.
321106

Suitable for
Branch circuits

Max. Voltage Rating
480 V

Degree of Protection
IP20; UL/CSA Type 1

DIMENSIONS