



Soft starter, 3p, 420A, Ue= 200-600VAC

Part no. **S811+U42N3S**  
Article no. **169870**  
Catalog No. **S811PLUSU42N3S**


## Delivery program

Description			With internal bypass contacts
Function			Soft starter for three-phase loads, with control unit
Mains supply voltage (50/60 Hz)	U <sub>LN</sub>	V AC	200 - 600
Supply voltage	U <sub>s</sub>		24 V DC
Control voltage	U <sub>c</sub>		24 V DC
<b>Assigned motor rating (Standard connection, In-Line)</b>			
at 400 V, 50 Hz	P	kW	200
at 460 V, 60 Hz	P	HP	350
<b>Rated operational current</b>			
AC-53	I <sub>e</sub>	A	420
AC-53, In-Delta	I <sub>e</sub>	A	727
Startup class			CLASS 10 (star-delta replacement) CLASS 20 (heavy starting duty 3 x I <sub>e</sub> for 45 s) CLASS 30 (6 x I <sub>e</sub> for 30 s)
Rated operational voltage	U <sub>e</sub>		200 V 230 V 400 V 480 V 600 V
Connection to SmartWire-DT			no
Frame size			U
Ordering information			Terminal blocks for the terminals are required for frame sizes T, U, and V -> Accessories

## Technical data

### General

Standards			IEC/EN 60947-4-2 UL 508 CSA22.2-14-1995 GB14048
Approvals			CE
Approvals			UL CSA C-Tick CCC
Climatic proofing			Damp heat, constant, to IEC 60068-2-3 Damp heat, cyclic, to IEC 60068-2-10
Ambient temperature			
Operation	θ	°C	-30 - +50
Storage	θ	°C	-50 - +70
Altitude		m	0 - 2000 m, above that each 100 m 0.5% Derating
Mounting position			As required
Degree of protection			
Degree of Protection			IP20 (terminals IP00)
Integrated			An IP20 degree of protection can be achieved on all sides by using optional terminal covers SS-IP20-TU.
Protection against direct contact			Finger- and back-of-hand proof
Overvoltage category/pollution degree			II/3
Shock resistance			15 g
Radio interference level (IEC/EN 55011)			A
Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	25

Weight		kg	18.6
<b>Main conducting paths</b>			
Rated operating voltage	$U_e$	V AC	200 - 600
Supply frequency	$f_{LN}$	Hz	50/60
Rated operational current	$I_e$	A	
AC-53, In-Delta	$I_e$	A	727
AC-53	$I_e$	A	420
Assigned motor rating (Standard connection, In-Line)			
at 230 V, 50 Hz	P	kW	132
at 400 V, 50 Hz	P	kW	200
at 500 V, 50 Hz	P	kW	250
at 200 V, 60 Hz	P	HP	125
at 230 V, 60 Hz	P	HP	150
at 460 V, 60 Hz	P	HP	350
at 600 V, 60 Hz	P	HP	450
Assigned motor rating (delta connection)			
at 230 V, 50 Hz	P	kW	200
at 400 V, 50 Hz	P	kW	400
at 500 V, 50 Hz	P	kW	500
at 230 V, 60 Hz		HP	300
at 480 V, 60 Hz		HP	600
at 600 V, 60 Hz	P	HP	750
Overload cycle to IEC/EN 60947-4-2			
AC-53a			420 A: AC-53a: 4.0 - 32: 99 - 3
Internal bypass contacts			
Short-circuit rating			
Type "1" coordination			NZMN3-S500
<b>Terminal capacities</b>			
Cable lengths			
Solid		mm <sup>2</sup>	1 x (70 - 240) 2 x (25 - 240)
Flexible with ferrule		mm <sup>2</sup>	1 x (70 - 240) 2 x (25 - 240)
Stranded		mm <sup>2</sup>	1 x (70 - 150) 2 x (25 - 240)
Solid or stranded		AWG	1 x (4 - 500 kcmil) 2 x (4 - 500 kcmil)
Control cables			
Solid		mm <sup>2</sup>	1 x (2.5 - 4) 2 x (1.0 - 2.5)
Flexible with ferrule		mm <sup>2</sup>	1 x (2.5 - 4) 2 x (1.0 - 2.5)
Stranded		mm <sup>2</sup>	1 x (2.5 - 4) 2 x (1.0 - 2.5)
Solid or stranded		AWG	21 x (12 - 14) 2 x (12 - 14)
Tightening torque		Nm	0.4
Screwdriver		mm	0,6 x 3,5
<b>Control circuit</b>			
Digital inputs			
Control voltage			
DC-operated		V DC	24 V DC +10 %/- 10 %
Current consumption 24 V			
External 24 V		mA	150
External 24 V (no-load)		mA	100
Pick-up voltage			
DC-operated		V DC	21.6 - 26.4
Drop-out voltage	$\times U_s$		

DC operated		V DC	
Drop-out voltage, DC-operated, max.		V DC	3
Pick-up time			
DC operated		ms	100
Drop-out time			
DC operated		ms	100
Regulator supply			
Voltage	$U_s$	V	24 V DC +10 %/- 10 %
Current consumption	$I_e$	mA	1000
Current consumption at peak performance (close bypass) at 24 V DC	$I_{peak}$	A/ms	10/150
Notes			External supply voltage
Analog inputs			
Number of current inputs			1
Current input		mA	4 - 20
Relay outputs			
Number			2
of which programmable			2
Voltage range		V AC	120 V AC/DC
AC-11 current range		A	3 A, AC-11

### Soft start function

Ramp times			
Acceleration		s	
Ramp time, max.		s	180
Deceleration		s	0 - 60
Start voltage (= turn-off voltage)		%	
Start voltage, max.		%	85
Start pedestal		%	
Start voltage, max.		%	85
Kickstart			
Voltage		%	
Kickstart voltage, max.		%	100
Duration			
50 Hz		ms	
Kickstart Duration 50 Hz max.		ms	2000
60 Hz		ms	
Kickstart Duration 60 Hz max.		ms	2000
Fields of application			
Fields of application			Soft starting of three-phase asynchronous motors
3-phase motors			✓

### Functions

Fast switching (semiconductor contactor)			- (minimum ramp time 1s)
Soft start function			✓
Reversing starter			External solution required (reversing contactor)
Suppression of closing transients			✓
Current limitation			✓
Overload monitoring			✓
Underload monitoring			✓
Fault memory		Faults	10
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	$I_n$	A	420
Heat dissipation per pole, current-dependent	$P_{vid}$	W	0
Equipment heat dissipation, current-dependent	$P_{vid}$	W	25
Static heat dissipation, non-current-dependent	$P_{vs}$	W	25
Heat dissipation capacity	$P_{diss}$	W	0
Operating ambient temperature min.		°C	-30
Operating ambient temperature max.		°C	50
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			
10.10 Temperature rise			
10.11 Short-circuit rating			
10.12 Electromagnetic compatibility			
10.13 Mechanical function			

## 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 [AC0300008])			
Rated operation current $I_e$ at 40 °C $T_u$		A	420
Rated operating voltage $U_e$		V	200 - 600
Rated power three-phase motor, inline, at 230 V		kW	132
Rated power three-phase motor, inline, at 400 V		kW	200
Rated power three-phase motor, inside delta, at 230 V		kW	200
Rated power three-phase motor, inside delta, at 400 V		kW	400
Internal bypass			Yes
With display			Yes
Torque control			No
Rated surrounding temperature without derating		°C	50
Rated control supply voltage $U_s$ at AC 50HZ		V	0 - 0
Rated control supply voltage $U_s$ at AC 60HZ		V	0 - 0

Rated control supply voltage $U_s$ at DC	V	24 - 24
Voltage type for actuating		DC
Integrated motor overload protection		Yes

## Approvals

Product Standards		IEC/EN 60947-4-2; UL 508; CSA C22.2 No. 14; CE marking
UL File No.		E202571
UL Category Control No.		NMFT
CSA File No.		LR 353
CSA Class No.		3211-06
North America Certification		UL listed, CSA certified
Suitable for		Branch Circuits, not as BCPD
Max. Voltage Rating		600 Vac
Degree of Protection		IP20 with kit

## Dimensions

