

Soft starter, 420 A, 200 - 600 V AC, Us= 24 V DC, with control unit and pump algorithm, Frame size U



Powering Business Worldwide™

Part no. **S811+U42P3S**  
**169873**

General specifications		
Product name		Eaton S811 Soft starter
Part no.		S811+U42P3S
EAN		4015081663705
Product Length/Depth		182 millimetre
Product height		323.1 millimetre
Product width		194.4 millimetre
Product weight		18.6 kilogram
Certifications		UL 508 UL Category Control No.: NMFT C-Tick UL File No.: E202571 CSA-C22.2 No. 14 UL IEC/EN 60947-4-2 CSA Class No.: 3211-06 CSA22.2-14-1995 CCC GB14048 CSA File No.: LR 353 CE CSA
Product Tradename		S811
Product Type		Soft starter
Product Sub Type		None
Catalog Notes		External solution required (reversing contactor) Regulator supply: External supply voltage Terminal blocks for the terminals are required for frame sizes T, U, and V -> Accessories
Features & Functions		
Fault memory		10 Faults
Fitted with:		Display Internal bypass Motor overload protection Internal bypass contacts
Functions		Suppression of DC components for motors Current limitation Potential isolation between power and control sections Single direction Min. ramp time 1 s - fast switching (semiconductor contactor) Soft start function Underload monitoring Overload monitoring Suppression of closing transients
Interfaces		Modbus RTU (built-in)
General information		
Class		Adjustable
Connection to SmartWire-DT		No
Degree of protection		IP20 NEMA Other
Frame size		U
Mains voltage - min		200 V
Mains voltage - max		600 V
Mounting position		As required
Overvoltage category		II
Pollution degree		3
Radio interference class		Class A (EN 55011)
Rated impulse withstand voltage (Uimp)		4000 V
Rated insulation voltage (Ui)		660 V

Shock resistance		15 g, Mechanical
Startup class		CLASS 20 (heavy starting duty 3 x I# for 45 s) CLASS 10 (star-delta replacement) CLASS 30 (6 x I# for 30 s)
Suitable for		Branch circuits, not as BCPD, (UL/CSA)
Type		Soft starter for three-phase loads, with control unit and pump algorithm
Voltage type		DC
<b>Climatic environmental conditions</b>		
Altitude		Above 2000 m with 0.5 % derating per 100 m Max. 2000 m
Ambient operating temperature - min		-30 °C
Ambient operating temperature - max		50 °C
Ambient storage temperature - min		-50 °C
Ambient storage temperature - max		70 °C
Climatic proofing		Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-3
<b>Main conducting paths</b>		
Overload cycle		AC-53a: 4.0 - 32: 99 - 3
Rated operational current (Ie) at AC-53		420 A
Rated operational current (Ie) at AC-53, in-delta		727 A
Rated operational voltage (Ue) - min		200 V
Rated operational voltage (Ue) - max		600 V
Short-circuit protection rating		NZMN3-S500, Type "1" coordination, Main conducting paths
Supply frequency		50/60 Hz, fLN, Main circuit
Voltage rating - max		600 V
<b>Motor rating</b>		
Assigned motor power at 200/208 V, 60 Hz, 3-phase		150 HP
Assigned motor power at 220/230 V, 60 Hz, 3-phase		150 HP
Assigned motor power at 460/480 V, 60 Hz, 3-phase		350 HP
Assigned motor power at 600 V, 60 Hz, 3-phase		450 HP
Assigned motor power in-delta at 220/230 V, 60 Hz		300 HP
Assigned motor power in-delta at 460/480 V, 60 Hz		600 HP
Assigned motor power in-delta at 575/600 V, 60 Hz		750 HP
Rated operational power at 220/230 V, 50 Hz		132 kW
Rated operational power at 400 V, 50 Hz		200 kW
Rated operational power at 500 V, 50 Hz		250 kW
Rated operational power in-delta at 220/230 V, 50 Hz		200 kW
Rated operational power in-delta at 400 V, 50 Hz		400 kW
Rated operational power in-delta at 500 V, 50 Hz		500 kW
<b>Terminal capacities</b>		
Terminal capacity (flexible with ferrule)		1 x (70 - 240) mm <sup>2</sup> , Main cables 2 x (1 - 2.5) mm <sup>2</sup> , Control circuit cables 2 x (25 - 240) mm <sup>2</sup> , Main cables 1 x (2.5 - 4) mm <sup>2</sup> , Control circuit cables
Terminal capacity (solid)		1 x (70 - 240) mm <sup>2</sup> , Main cables 2 x (1 - 2.5) mm <sup>2</sup> , Control circuit cables 2 x (25 - 240) mm <sup>2</sup> , Main cables 1 x (2.5 - 4) mm <sup>2</sup> , Control circuit cables
Terminal capacity (solid/stranded AWG)		1 x (14 - 12), Control circuit cables 1 x (4 - 500 kcmil), Main cables 2 x (4 - 500 kcmil), Main cables 2 x (14 - 12), Control circuit cables
Terminal capacity (stranded)		1 x (70 - 150) mm <sup>2</sup> , Main cables 2 x (25 - 240) mm <sup>2</sup> , Main cables 2 x (1 - 2.5) mm <sup>2</sup> , Control circuit cables 1 x (2.5 - 4) mm <sup>2</sup> , Control circuit cables
Screwdriver size		0.6 x 3.5 mm, Terminal screws, Control circuit cables
Tightening torque		0.4 Nm, Screw terminals, Control circuit cables
<b>Control circuit</b>		
Current consumption		1000 mA, Control circuit, Regulator supply 150 mA, Control circuit, Digital inputs, External 24 V 100 mA, Control circuit, Digital inputs, External 24 V (no-load)

		10 A/150 ms, Control circuit, Regulator supply at peak performance (close bypass) at 24 V DC
Drop-out time		100 ms, DC operated
Drop-out voltage		0 - 3 V, DC operated
Pick-up time		100 ms at DC
Pick-up voltage		21.6 - 26.4 V DC
Rated control supply voltage (Us) at AC, 50 Hz - min		0 V
Rated control supply voltage (Us) at AC, 50 Hz - max		0 V
Rated control supply voltage (Us) at AC, 60 Hz - min		0 V
Rated control supply voltage (Us) at AC, 60 Hz - max		0 V
Rated control supply voltage (Us) at DC - min		24 V
Rated control supply voltage (Us) at DC - max		24 V
<b>Input/Output</b>		
Input current		4 - 20 mA (Analog inputs)
Number of inputs		1 (current input)
Number of outputs		2 Relay Outputs (programmable)
Output voltage		120 V AC/DC (relay outputs)
Protection		Finger and back-of-hand proof, Protection against direct contact
Rated control voltage (Uc)		24 V DC (-10 %/+10 %) 24 V DC
Rated operational current (Ie) at AC-11		3 A
<b>Soft start function</b>		
Application		3-phase motors: Yes Soft starting of three-phase asynchronous motors
Delay time		0 - 120 s, Soft start function, Ramp times
Kickstart		100% (Kickstart voltage) Max. 2000 ms (Kickstart Duration)
Ramp/run-up time		360 s
Start voltage		Max. 85 %, Soft start function, Start voltage = turn-off voltage
<b>Design verification</b>		
Equipment heat dissipation, current-dependent Pvid		25 W
Heat dissipation capacity Pdis		0 W
Heat dissipation per pole, current-dependent Pvid		0 W
Rated operational current for specified heat dissipation (In)		420 A
Static heat dissipation, non-current-dependent Pvs		25 W
10.2.2 Corrosion resistance		Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures		Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat		Meets the product standard's requirements.
10.2.3.3 Resist. of insul. mat. to abnormal heat/fire by internal elect. effects		Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation		Meets the product standard's requirements.
10.2.5 Lifting		Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact		Does not apply, since the entire switchgear needs to be evaluated.
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.
10.9.2 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.

## Technical data ETIM 9.0

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@ss13-27-37-09-07 [AC0300016])		
Rated operation current I <sub>e</sub> at 40 °C T <sub>u</sub>	A	420
Rated operating voltage U <sub>e</sub>	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
Function		Single direction
Internal bypass		Yes
With display		Yes
Torque control		No
Rated surrounding temperature without derating	°C	50
Rated control supply voltage AC 50 Hz	V	0 - 0
Rated control supply voltage AC 60 Hz	V	0 - 0
Rated control supply voltage DC	V	24 - 24
Voltage type for actuating		DC
Integrated motor overload protection		Yes
Release class		Adjustable
Degree of protection (IP)		IP20
Degree of protection (NEMA)		Other