

Soft starter, 500 A, 200 - 690 V AC, Us= 24 V DC, with control unit and pump algorithm, for 690-V grids, Frame size V

Part no. S811+V50V3S
169001
EL Number 4137485
(Norway)

General specifications		
Product name		Eaton S811 Soft starter
Part no.		S811+V50V3S
EAN		4015081654956
Product Length/Depth		187.8 millimetre
Product height		420.8 millimetre
Product width		280.6 millimetre
Product weight		41.4 kilogram
Certifications		UL UL 508 UL File No.: E202571 GB14048 CSA CCC UL Category Control No.: NMFT CE CSA22.2-14-1995 C-Tick IEC/EN 60947-4-2
Product Tradename		S811
Product Type		Soft starter
Product Sub Type		None
Catalog Notes		Terminal blocks for the terminals are required for frame sizes T, U, and V -> Accessories Regulator supply: External supply voltage External solution required (reversing contactor)
Features & Functions		
Fault memory		10 Faults
Fitted with:		Internal bypass contacts Display Internal bypass Motor overload protection
Functions		Underload monitoring Current limitation Suppression of closing transients Suppression of DC components for motors Single direction Overload monitoring Potential isolation between power and control sections Soft start function Min. ramp time 1 s - fast switching (semiconductor contactor)
Interfaces		Modbus RTU (built-in)
General information		
Class		Adjustable
Connection to SmartWire-DT		No
Degree of protection		NEMA Other IP00
Frame size		V
Mains voltage - min		200 V
Mains voltage - max		690 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
Shock resistance		15 g, Mechanical
Startup class		CLASS 30 (6 x I# for 30 s) CLASS 20 (heavy starting duty 3 x I# for 45 s)

			CLASS 10 (star-delta replacement)
Suitable for			Branch circuits, not as BCPD, (UL/CSA)
Type			Soft starter for three-phase loads, with control unit and pump algorithm, for 690-V grids
Voltage type			DC
Climatic environmental conditions			
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, constant, to IEC 60068-2-3 Damp heat, cyclic, to IEC 60068-2-30
Main conducting paths			
Overload cycle			AC-53a: 4.0 - 32: 99 - 3
Rated operational current (Ie) at AC-53			500 A
Rated operational voltage (Ue) - min			200 V
Rated operational voltage (Ue) - max			690 V
Short-circuit protection rating			NZMN3-S500, Type “1” coordination, Main conducting paths
Supply frequency			50/60 Hz, fLN, Main circuit
Voltage rating - max			690 V
Motor rating			
Assigned motor power at 200/208 V, 60 Hz, 3-phase			150 HP
Assigned motor power at 220/230 V, 60 Hz, 3-phase			200 HP
Assigned motor power at 460/480 V, 60 Hz, 3-phase			400 HP
Assigned motor power at 600 V, 60 Hz, 3-phase			500 HP
Assigned motor power at 690 V, 60 Hz, 3-phase			600 HP
Assigned motor power in-delta at 690 V, 60 Hz			850 HP
Rated operational power at 220/230 V, 50 Hz			160 kW
Rated operational power at 400 V, 50 Hz			250 kW
Rated operational power at 500 V, 50 Hz			315 kW
Rated operational power at 690 V, 50 Hz			500 kW
Terminal capacities			
Terminal capacity (flexible with ferrule)			6 x (120 - 240) mm ² , Main cables 4 x (70 - 240) mm ² , Main cables 2 x (1 - 2.5) mm ² , Control circuit cables 1 x (2.5 - 4) mm ² , Control circuit cables 2 x (120 - 240) mm ² , Main cables
Terminal capacity (solid)			4 x (70 - 240) mm ² , Main cables 6 x (120 - 240) mm ² , Main cables 2 x (120 - 240) mm ² , Main cables 2 x (1 - 2.5) mm ² , Control circuit cables 1 x (2.5 - 4) mm ² , Control circuit cables
Terminal capacity (solid/stranded AWG)			2 x (14 - 12), Control circuit cables 2 x (4 - 500 kcmil), Main cables 1 x (14 - 12), Control circuit cables 6 x (4 - 500 kcmil), Main cables 4 x (4 - 500 kcmil), Main cables
Terminal capacity (stranded)			2 x (120 - 240) mm ² , Main cables 2 x (1 - 2.5) mm ² , Control circuit cables 4 x (70 - 240) mm ² , Main cables 6 x (120 - 240) mm ² , Main cables 1 x (2.5 - 4) mm ² , 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
Control circuit			
Current consumption			1400 mA, Control circuit, Regulator supply 100 mA, Control circuit, Digital inputs, External 24 V (no-load) 150 mA, Control circuit, Digital inputs, External 24 V 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
Input/Output		
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
Soft start function		
Application		Soft starting of three-phase asynchronous motors 3-phase motors: Yes
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
Design verification		
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)		500 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.
10.13 Mechanical function		The device meets the requirements, provided the information in the instruction leaflet (IL) is 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 (ecI@ss13-27-37-09-07 [AC0300016])		
Rated operation current Ie at 40 °C Tu	A	500
Rated operating voltage Ue	V	200 - 690
Rated power three-phase motor, inline, at 230 V	kW	160
Rated power three-phase motor, inline, at 400 V	kW	250
Rated power three-phase motor, inside delta, at 230 V	kW	200
Rated power three-phase motor, inside delta, at 400 V	kW	450
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)		IP00
Degree of protection (NEMA)		Other