DATASHEET - S811+T30V3S

Soft starter, 304 A, 200 - 690 V AC, Us= 24 V DC, with control unit and pump algorithm, for 690-V grids, Frame size T

Part no.	**S811+T30V3S**
	168992
EL Number (Norway)	**4137476**

General specifications

Product name	Eaton S811 Soft starter
Part no.	S811+T30V3S
EAN	4015081654871
Product Length/Depth	164.4 millimetre
Product height	322.9 millimetre
Product width	194.4 millimetre
Product weight	18.6 kilogram
Certifications	UL GB14048 UL Category Control No.: NMFT UL File No.: E202571 UL 508 IEC/EN 60947-4-2 CCC CSA C-Tick CE CSA22.2-14-1995
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 Internal bypass contacts Motor overload protection
Functions	Suppression of DC components for motors Soft start function Overload monitoring Min. ramp time 1 s - fast switching (semiconductor contactor) Current limitation Single direction Suppression of closing transients Potential isolation between power and control sections Underload monitoring
Interfaces	Modbus RTU (built-in)

General information

Class	Adjustable
Connection to SmartWire-DT	No
Degree of protection	IP20 NEMA Other
Frame size	T
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 10 (star-delta replacement)

	CLASS 20 (heavy starting duty 3 x I# for 45 s)
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	304 A
Rated operational voltage (Ue) - min	200 V
Rated operational voltage (Ue) - max	690 V
Short-circuit protection rating	NZMN3-S320, 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	100 HP
Assigned motor power at 220/230 V, 60 Hz, 3-phase	100 HP
Assigned motor power at 460/480 V, 60 Hz, 3-phase	250 HP
Assigned motor power at 600 V, 60 Hz, 3-phase	300 HP
Assigned motor power at 690 V, 60 Hz, 3-phase	350 HP
Assigned motor power in-delta at 690 V, 60 Hz	600 HP
Rated operational power at 220/230 V, 50 Hz	90 kW
Rated operational power at 400 V, 50 Hz	160 kW
Rated operational power at 500 V, 50 Hz	200 kW
Rated operational power at 690 V, 50 Hz	250 kW
Terminal capacities	
Terminal capacity (flexible with ferrule)	2 x (1 - 2.5) mm^2, Control circuit cables 1 x (2.5 - 4) mm^2, Control circuit cables 1 x (70 - 240) mm^2, Main cables 2 x (25 - 240) mm^2, Main cables
Terminal capacity (solid)	2 x (1 - 2.5) mm^2, Control circuit cables 1 x (70 - 240) mm^2, Main cables 1 x (2.5 - 4) mm^2, Control circuit cables 2 x (25 - 240) mm^2, Main 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 1 x (4 - 500 kcmil), Main cables
Terminal capacity (stranded)	1 x (2.5 - 4) mm^2, Control circuit cables 2 x (1 - 2.5) mm^2, Control circuit cables 2 x (25 - 240) mm^2, Main cables 1 x (70 - 240) mm^2, Main cables
Screwdriver size	0.6 x 3.5 mm, Terminal screws, Control circuit cables 4 mm Hexagon socket-head screw, Terminal screw, Main cables
Tightening torque	0.4 Nm, Screw terminals, Control circuit cables 28.3 Nm (> 150 mm^2) 25.5 Nm (≤ 150 mm^2)
Control circuit	
Current consumption	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 1000 mA, Control circuit, Regulator supply 100 mA, Control circuit, Digital inputs, External 24 V (no-load)
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	3-phase motors: Yes Soft starting of three-phase asynchronous motors
Delay time	0 - 120 s, Soft start function, Ramp times
Kickstart	Max. 2000 ms (Kickstart Duration) 100% (Kickstart voltage)
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 Pdiss	0 W
Heat dissipation per pole, current-dependent Pvid	0 W
Rated operational current for specified heat dissipation (In)	304 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 (ecl@ss13-27-37-09-07 [ACO300016])			
Rated operation current Ie at 40 °C Tu		A	304
Rated operating voltage Ue		V	200 - 690
Rated power three-phase motor, inline, at 230 V		kW	90
Rated power three-phase motor, inline, at 400 V		kW	160
Rated power three-phase motor, inside delta, at 230 V		kW	160
Rated power three-phase motor, inside delta, at 400 V		kW	250
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

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