DATASHEET - S811+R10P3S

Soft starter, 105 A, 200 - 600 V AC, Us= 24 V DC, with control unit and pump algorithm, Frame size R

Part no.	**S811+R10P3S**	
	168981	
EL Number (Norway)	**4137465**	

General specifications

Product name		Eaton S811 Soft starter
Part no.		S811+R10P3S
EAN		4015081654772
Product Length/Depth		168.6 millimetre
Product height		201.2 millimetre
Product width		111.3 millimetre
Product weight		4.8 kilogram
Certifications		UL File No.: E202571 C-Tick CSA CSA-C22.2 No. 14 CSA File No.: LR 353 CSA Class No.: 3211-06, 2411-01 UL UL Category Control No.: NMFT GB14048 CCC UL 508 IEC/EN 60947-4-2 CE CSA22.2-14-1995 UL CSA
Product Tradename		S811
Product Type		Soft starter
Product Sub Type		None
Catalog Notes		External solution required (reversing contactor) Regulator supply: External supply voltage

Features & Functions

Fault memory		10 Faults
Fitted with:		Internal bypass Motor overload protection Display Internal bypass contacts
Functions		Suppression of closing transients Overload monitoring Potential isolation between power and control sections Current limitation Soft start function Suppression of DC components for motors Single direction Min. ramp time 1 s - fast switching (semiconductor contactor) Underload monitoring
Interfaces		Modbus RTU (built-in)

General information

Class		Adjustable
Connection to SmartWire-DT		No
Degree of protection		IP20 NEMA Other
Frame size		R
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 10 (star-delta replacement) CLASS 30 (6 x I# for 30 s) 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
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, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-3

Main conducting paths

Overload cycle		AC-53a: 4.0 - 32: 99 - 3
Rated operational current (Ie) at AC-53		105 A
Rated operational current (Ie) at AC-53, in-delta		182 A
Rated operational voltage (Ue) - min		200 V
Rated operational voltage (Ue) - max		600 V
Short-circuit protection rating		NZMN2-S125, Type "1" coordination, Main conducting paths
Supply frequency		50/60 Hz, fLN, Main circuit
Voltage rating - max		600 V

Motor rating

Assigned motor power at 200/208 V, 60 Hz, 3-phase		30 HP
Assigned motor power at 220/230 V, 60 Hz, 3-phase		40 HP
Assigned motor power at 460/480 V, 60 Hz, 3-phase		75 HP
Assigned motor power at 600 V, 60 Hz, 3-phase		100 HP
Assigned motor power in-delta at 220/230 V, 60 Hz		60 HP
Assigned motor power in-delta at 460/480 V, 60 Hz		150 HP
Assigned motor power in-delta at 575/600 V, 60 Hz		150 HP
Rated operational power at 220/230 V, 50 Hz		30 kW
Rated operational power at 400 V, 50 Hz		55 kW
Rated operational power at 500 V, 50 Hz		55 kW
Rated operational power in-delta at 220/230 V, 50 Hz		55 kW
Rated operational power in-delta at 400 V, 50 Hz		90 kW
Rated operational power in-delta at 500 V, 50 Hz		110 kW

Terminal capacities

Terminal capacity (flexible with ferrule)		1 x (2.5 - 95) mm², Main cables 1 x (2.5 - 4) mm², Control circuit cables 2 x (1 - 2.5) mm², Control circuit cables
Terminal capacity (solid)		1 x (2.5 - 4) mm², Control circuit cables 2 x (1 - 2.5) mm², Control circuit cables 1 x (2.5 - 95) mm², Main cables
Terminal capacity (solid/stranded AWG)		1 x (14 - 4/0), Main cables 1 x (14 - 12), Control circuit cables 2 x (14 - 12), Control circuit cables
Terminal capacity (stranded)		1 x (2.5 - 4) mm², Control circuit cables 2 x (1 - 2.5) mm², Control circuit cables 1 x (2.5 - 95) mm², Main cables
Screwdriver size		4 mm Hexagon socket-head screw, Terminal screw, Main cables 0.6 x 3.5 mm, Terminal screws, Control circuit cables
Tightening torque		0.4 Nm, Screw terminals, Control circuit cables 11.3 Nm

Control circuit

Current consumption		10 A/150 ms, Control circuit, Regulator supply at peak performance (close bypass) at 24 V DC 150 mA, Control circuit, Digital inputs, External 24 V 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		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 Pdiss		0 W
Heat dissipation per pole, current-dependent Pvid		0 W
Rated operational current for specified heat dissipation (In)		105 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	105
Rated operating voltage Ue	V	200 - 600
Rated power three-phase motor, inline, at 230 V	kW	30
Rated power three-phase motor, inline, at 400 V	kW	55
Rated power three-phase motor, inside delta, at 230 V	kW	55
Rated power three-phase motor, inside delta, at 400 V	kW	90
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