DATASHEET - S811+R13P3S

Soft starter, 135 A, 200 - 600 V AC, Us= 24 V DC, with control unit and pump algorithm, Frame size R

Part no.	**S811+R13P3S**
	168983
EL Number (Norway)	**4137467**

General specifications

Product name	Eaton S811 Soft starter
Part no.	S811+R13P3S
EAN	4015081654796
Product Length/Depth	168.6 millimetre
Product height	201.2 millimetre
Product width	111.3 millimetre
Product weight	4.8 kilogram
Certifications	GB14048 CSA Class No.: 3211-06, 2411-01 UL Category Control No.: NMFT UL UL File No.: E202571 CSA-C22.2 No. 14 IEC/EN 60947-4-2 UL 508 CCC CSA File No.: LR 353 CSA C-Tick CSA22.2-14-1995 CE
Product Tradename	S811
Product Type	Soft starter
Product Sub Type	None
Catalog Notes	Regulator supply: External supply voltage External solution required (reversing contactor)

Features & Functions

Fault memory	10 Faults
Fitted with:	Display Internal bypass Motor overload protection Internal bypass contacts
Functions	Potential isolation between power and control sections Current limitation Soft start function Underload monitoring Suppression of closing transients Suppression of DC components for motors Single direction Overload monitoring 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	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 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
Voltage type	DC

Climatic environmental conditions

Altitude	Max. 2000 m Above 2000 m with 0.5 % derating per 100 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	135 A
Rated operational current (Ie) at AC-53, in-delta	234 A
Rated operational voltage (Ue) - min	200 V
Rated operational voltage (Ue) - max	600 V
Short-circuit protection rating	NZMN2-S160, 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	40 HP
Assigned motor power at 220/230 V, 60 Hz, 3-phase	50 HP
Assigned motor power at 460/480 V, 60 Hz, 3-phase	100 HP
Assigned motor power at 600 V, 60 Hz, 3-phase	125 HP
Assigned motor power in-delta at 220/230 V, 60 Hz	75 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	200 HP
Rated operational power at 220/230 V, 50 Hz	37 kW
Rated operational power at 400 V, 50 Hz	75 kW
Rated operational power at 500 V, 50 Hz	90 kW
Rated operational power in-delta at 220/230 V, 50 Hz	75 kW
Rated operational power in-delta at 400 V, 50 Hz	132 kW
Rated operational power in-delta at 500 V, 50 Hz	160 kW

Terminal capacities

Terminal capacity (flexible with ferrule)	2 x (1 - 2.5) mm^2, Control circuit cables 1 x (2.5 - 95) mm^2, Main cables 1 x (2.5 - 4) mm^2, Control circuit cables
Terminal capacity (solid)	1 x (2.5 - 4) mm^2, Control circuit cables 1 x (2.5 - 95) mm^2, Main cables 2 x (1 - 2.5) mm^2, Control circuit 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)	2 x (1 - 2.5) mm^2, Control circuit cables 1 x (2.5 - 4) mm^2, Control circuit cables 1 x (2.5 - 95) 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 11.3 Nm

Control circuit

Current consumption	1000 mA, Control circuit, Regulator supply 10 A/150 ms, Control circuit, Regulator supply at peak performance (close bypass) at 24 V DC 100 mA, Control circuit, Digital inputs, External 24 V (no-load) 150 mA, Control circuit, Digital inputs, External 24 V

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 24 V DC (-10 %/+10 %)
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	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)	135 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	135
Rated operating voltage Ue	V	200 - 600
Rated power three-phase motor, inline, at 230 V	kW	37
Rated power three-phase motor, inline, at 400 V	kW	75
Rated power three-phase motor, inside delta, at 230 V	kW	75
Rated power three-phase motor, inside delta, at 400 V	kW	132
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

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