



PRODUCT-DETAILS

AF09-30-10-13

AF09-30-10-13 100-250V50/60HZ-DC

Contactor



General Information

Extended Product Type	AF09-30-10-13
Product ID	1SBL137001R1310
EAN	3471523110038
Catalog Description	AF09-30-10-13 100-250V50/60HZ-DC Contactor
Long Description	The AF09-30-10-13 is a 3 pole - 690 V IEC or 600 UL contactor with 1 built-in auxiliary contact and screw terminals, controlling motors up to 4 kW / 400 V AC (AC-3) or 5 hp / 480 V UL and switching power circuits up to 25 A (AC-1) or 25 A UL general use. Thanks to the AF technology, the contactor has a wide control voltage range (100-250 V 50/60 Hz and DC), managing large control voltage variations, reducing panel energy consumptions and ensuring distinct operations in unstable networks. Furthermore, surge protection is built-in, offering a compact solution. AF contactors have a block type design, can be easily extended with add-on auxiliary contact blocks and an additional wide range of accessories.

Ordering

Minimum Order Quantity	1 piece
Customs Tariff Number	85364900

Popular Downloads	
EPLAN Data	9AAC159656_EPLAN
Data Sheet, Technical Information	1SBC100214C0202
Instructions and Manuals	1SBC101027M6801
Instructions and Manuals (Part 2)	1SAC200017M0002
CAD Dimensional Drawing	2CDC001079B0201

Dimensions	
Product Net Width	45 mm
Product Net Depth / Length	77 mm
Product Net Height	86 mm
Product Net Weight	0.27 kg

Technical	
Number of Main Contacts NO	3
Number of Main Contacts NC	0
Number of Auxiliary Contacts NO	1
Number of Auxiliary Contacts NC	0
Number of Poles	3P
Standards	IEC/EN 60947-1, IEC/EN 60947-4-1, UL 60335-2-40 LZGH2 A2L, UL 60947-4-1, CSA C22.2 No. 60335-2-40 LZGH2 A2L, CSA C22.2 No. 60947-4-1
Rated Operational Voltage	Auxiliary Circuit 690 V Main Circuit 690 V
Rated Frequency (f)	Auxiliary Circuit 50 / 60 Hz Control Circuit 50 / 60 Hz Main Circuit 50 / 60 Hz
Conventional Free-air Thermal Current (I _{th})	acc. to IEC 60947-4-1, Open Contactors $\Theta = 40\text{ }^{\circ}\text{C}$ 35 A acc. to IEC 60947-5-1, $\Theta = 40\text{ }^{\circ}\text{C}$ 16 A
Rated Operational Current AC-1 (I _e)	(690 V) 40 °C 25 A (690 V) 60 °C 25 A (690 V) 70 °C 22 A
Rated Operational Current AC-3 (I _e)	(415 V) 60 °C 9 A (440 V) 60 °C 9 A (500 V) 60 °C 9.5 A (690 V) 60 °C 7 A (380 / 400 V) 60 °C 9 A (220 / 230 / 240 V) 60 °C 9 A
Rated Operational Current AC-3e (I _e)	(415 V) 60 °C 9 A (440 V) 60 °C 9 A (500 V) 60 °C 9.5 A (690 V) 60 °C 7 A (380 / 400 V) 60 °C 9 A (220 / 230 / 240 V) 60 °C 9 A
Rated Operational Current AC-15 (I _e)	(500 V) 2 A (690 V) 2 A (24 / 127 V) 6 A (220 / 240 V) 4 A (400 / 440 V) 3 A
Rated Operational	(110 V) 1-Pole, 40 °C 10 A

Current DC-1 (I_e)

(110 V) 1-Pole, 60 °C 10 A
(110 V) 1-Pole, 70 °C 10 A
(110 V) 2 Poles in Series, 40 °C 25 A
(110 V) 2 Poles in Series, 60 °C 25 A
(110 V) 2 Poles in Series, 70 °C 22 A
(110 V) 3 Poles in Series, 40 °C 25 A
(110 V) 3 Poles in Series, 60 °C 25 A
(110 V) 3 Poles in Series, 70 °C 22 A
(220 V) 2 Poles in Series, 40 °C 10 A
(220 V) 2 Poles in Series, 60 °C 10 A
(220 V) 2 Poles in Series, 70 °C 10 A
(220 V) 3 Poles in Series, 40 °C 25 A
(220 V) 3 Poles in Series, 60 °C 25 A
(220 V) 3 Poles in Series, 70 °C 22 A
(72 V) 1-Pole, 40 °C 25 A
(72 V) 1-Pole, 60 °C 25 A
(72 V) 1-Pole, 70 °C 22 A
(72 V) 2 Poles in Series, 40 °C 25 A
(72 V) 2 Poles in Series, 60 °C 25 A
(72 V) 2 Poles in Series, 70 °C 22 A
(72 V) 3 Poles in Series, 40 °C 25 A
(72 V) 3 Poles in Series, 60 °C 25 A
(72 V) 3 Poles in Series, 70 °C 22 A

Rated Operational
Current DC-3 (I_e)

(110 V) 1-Pole, 40 °C 6 A
(110 V) 1-Pole, 60 °C 6 A
(110 V) 1-Pole, 70 °C 6 A
(110 V) 2 Poles in Series, 40 °C 25 A
(110 V) 2 Poles in Series, 60 °C 25 A
(110 V) 2 Poles in Series, 70 °C 22 A
(110 V) 3 Poles in Series, 40 °C 25 A
(110 V) 3 Poles in Series, 60 °C 25 A
(110 V) 3 Poles in Series, 70 °C 22 A
(220 V) 2 Poles in Series, 40 °C 6 A
(220 V) 2 Poles in Series, 60 °C 6 A
(220 V) 2 Poles in Series, 70 °C 6 A
(220 V) 3 Poles in Series, 40 °C 25 A
(220 V) 3 Poles in Series, 60 °C 25 A
(220 V) 3 Poles in Series, 70 °C 22 A
(72 V) 1-Pole, 40 °C 25 A
(72 V) 1-Pole, 60 °C 25 A
(72 V) 1-Pole, 70 °C 22 A
(72 V) 2 Poles in Series, 40 °C 25 A
(72 V) 2 Poles in Series, 60 °C 25 A
(72 V) 2 Poles in Series, 70 °C 22 A
(72 V) 3 Poles in Series, 40 °C 25 A
(72 V) 3 Poles in Series, 60 °C 25 A
(72 V) 3 Poles in Series, 70 °C 22 A

Rated Operational
Current DC-5 (I_e)

(110 V) 1-Pole, 40 °C 4 A
(110 V) 1-Pole, 60 °C 4 A
(110 V) 1-Pole, 70 °C 4 A
(110 V) 2 Poles in Series, 40 °C 10 A
(110 V) 2 Poles in Series, 60 °C 10 A
(110 V) 2 Poles in Series, 70 °C 10 A
(110 V) 3 Poles in Series, 40 °C 25 A
(110 V) 3 Poles in Series, 60 °C 25 A
(110 V) 3 Poles in Series, 70 °C 22 A
(220 V) 2 Poles in Series, 40 °C 4 A
(220 V) 2 Poles in Series, 60 °C 4 A
(220 V) 2 Poles in Series, 70 °C 4 A
(220 V) 3 Poles in Series, 40 °C 9 A
(220 V) 3 Poles in Series, 60 °C 9 A
(220 V) 3 Poles in Series, 70 °C 9 A
(72 V) 1-Pole, 40 °C 9 A
(72 V) 1-Pole, 60 °C 9 A
(72 V) 1-Pole, 70 °C 9 A
(72 V) 2 Poles in Series, 40 °C 25 A
(72 V) 2 Poles in Series, 60 °C 25 A
(72 V) 2 Poles in Series, 70 °C 22 A
(72 V) 3 Poles in Series, 40 °C 25 A
(72 V) 3 Poles in Series, 60 °C 25 A
(72 V) 3 Poles in Series, 70 °C 22 A

Rated Operational Current DC-13 (I _e)	(24 V) 6 A / 144 W (48 V) 2.8 A / 134 W (72 V) 1 A / 72 W (110 V) 0.55 A / 60 W (125 V) 0.55 A / 69 W (220 V) 0.27 A / 60 W (250 V) 0.27 A / 68 W (400 V) 0.15 A / 60 W (500 V) 0.13 A / 65 W (600 V) 0.1 A / 60 W
Rated Operational Power AC-3 (P _e)	(400 V) 4 kW (415 V) 4 kW (440 V) 4 kW (500 V) 5.5 kW (690 V) 5.5 kW (380 / 400 V) 4 kW (220 / 230 / 240 V) 2.2 kW
Rated Operational Power AC-3e (P _e)	(415 V) 4 kW (440 V) 4 kW (500 V) 5.5 kW (690 V) 5.5 kW (380 / 400 V) 4 kW (220 / 230 / 240 V) 2.2 kW
Rated Short-time Withstand Current Low Voltage (I _{cw})	at 40 °C Ambient Temp, in Free Air, from a Cold State 10 s 150 A at 40 °C Ambient Temp, in Free Air, from a Cold State 15 min 35 A at 40 °C Ambient Temp, in Free Air, from a Cold State 1 min 60 A at 40 °C Ambient Temp, in Free Air, from a Cold State 1 s 300 A at 40 °C Ambient Temp, in Free Air, from a Cold State 30 s 80 A for 0.1 s 140 A for 1 s 100 A
Maximum Breaking Capacity	cos phi=0.45 (cos phi=0.35 for I _e > 100 A) at 440 V 250 A cos phi=0.45 (cos phi=0.35 for I _e > 100 A) at 690 V 106 A
Rated Insulation Voltage (U _i)	acc. to IEC 60947-4-1 690 V acc. to IEC 60947-5-1 690 V acc. to UL/CSA 600 V
Rated Impulse Withstand Voltage (U _{imp})	6 kV
Maximum Electrical Switching Frequency	(AC-1) 600 cycles per hour (AC-15) 1200 cycles per hour (AC-2 / AC-4) 300 cycles per hour (AC-3) 1200 cycles per hour (DC-13) 900 cycles per hour 3600 cycles per hour
Maximum Mechanical Switching Frequency	
Rated Control Circuit Voltage (U _c)	50 Hz 100 ... 250 V 60 Hz 100 ... 250 V DC Operation 100 ... 250 V
Power Loss	at 6 A per Pole 0.1 W at Rated Operating Conditions AC-1 per Pole 0.8 W at Rated Operating Conditions AC-3 per Pole 0.1 W
Operate Time	Between Coil De-energization and NC Contact Closing 13 ... 98 ms Between Coil De-energization and NO Contact Opening 11 ... 95 ms Between Coil Energization and NC Contact Opening 38 ... 90 ms Between Coil Energization and NO Contact Closing 40 ... 95 ms
Mounting on DIN Rail	TH35-15 (35 x 15 mm Mounting Rail) acc. to IEC 60715 TH35-7.5 (35 x 7.5 mm Mounting Rail) acc. to IEC 60715
Mounting by Screws (not supplied)	2 x M4 Screws Placed Diagonally
Connecting Capacity Main Circuit	Flexible with Ferrule 1/2x 0.75 ... 6 mm² Flexible with Insulated Ferrule 1x 0.75 ... 4 mm² Flexible with Insulated Ferrule 2x 0.75 ... 2.5 mm² Rigid Solid 1/2x 1 ... 4 mm² Rigid Stranded 1/2x 1 ... 6 mm²
Connecting Capacity Auxiliary Circuit	Flexible with Ferrule 1/2x 0.75 ... 2.5 mm² Flexible with Insulated Ferrule 2x 0.75 ... 1.5 mm²

	Flexible with Insulated Ferrule 1x 0.75 ... 2.5 mm² Rigid Solid 1/2x 1 ... 2.5 mm² Rigid Stranded 1/2x 1 ... 2.5 mm²
Connecting Capacity Control Circuit	Flexible with Ferrule 1/2x 0.75 ... 2.5 mm² Flexible with Insulated Ferrule 1x 0.75 ... 2.5 mm² Flexible with Insulated Ferrule 2x 0.75 ... 1.5 mm² Rigid Solid 1/2x 1 ... 2.5 mm² Rigid Stranded 1/2x 1 ... 2.5 mm²
Wire Stripping Length	Auxiliary Circuit 10 mm Control Circuit 10 mm Main Circuit 10 mm
Degree of Protection	acc. to IEC 60529, IEC 60947-1, EN 60529 Auxiliary Terminals IP20 acc. to IEC 60529, IEC 60947-1, EN 60529 Coil Terminals IP20 acc. to IEC 60529, IEC 60947-1, EN 60529 Main Terminals IP20
Tightening Torque	Auxiliary Circuit 1.2 N·m Control Circuit 1.2 N·m Main Circuit 1.5 N·m
Terminal Type	Screw Terminals
Product Name	Block Contactor

Technical UL/CSA

NEMA Size	00
Continuous Current Rating NEMA	9 A
Horsepower Rating NEMA	(115 V AC) Single Phase 1/3 Hp (200 V AC) Three Phase 1-1/2 Hp (230 V AC) Single Phase 1 Hp (230 V AC) Three Phase 1-1/2 Hp (460 V AC) Three Phase 2 Hp (575 V AC) Three Phase 2 Hp
Maximum Operating Voltage UL/CSA	Main Circuit 600 V
General Use Rating UL/CSA	(600 V AC) 25 A
Horsepower Rating UL/CSA	(120 V AC) Single Phase 3/4 hp (200 ... 208 V AC) Three Phase 2 hp (220 ... 240 V AC) Three Phase 2 hp (240 V AC) Single Phase 1-1/2 hp (440 ... 480 V AC) Three Phase 5 hp (550 ... 600 V AC) Three Phase 7-1/2 hp
Connecting Capacity Main Circuit UL/CSA	Rigid Solid 1/2x 16-10 AWG Rigid Stranded 1/2x 16-10 AWG
Connecting Capacity Auxiliary Circuit UL/CSA	Rigid Solid 1/2x 18-14 AWG Rigid Stranded 1/2x 18-14 AWG
Connecting Capacity Control Circuit UL/CSA	Rigid Solid 1/2x 18-14 AWG Rigid Stranded 1/2x 18-14 AWG
Tightening Torque UL/CSA	Auxiliary Circuit 11 in·lb Control Circuit 11 in·lb Main Circuit 13 in·lb
Full Load Amps Motor Use	(120 V AC) Single Phase 13.8 A (200 ... 208 V AC) Three Phase 7.8 A (220 ... 240 V AC) Three Phase 6.8 A (240 V AC) Single Phase 10 A (440 ... 480 V AC) Three Phase 7.6 A (550 ... 600 V AC) Three Phase 9 A

Environmental

Ambient Air Temperature	Close to Contactor Fitted with Thermal O/L Relay -25 ... 60 °C Close to Contactor without Thermal O/L Relay -40 ... 70 °C Close to Contactor for Storage -60 ... +80 °C
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Climatic Withstand	Category B according to IEC 60947-1 Annex Q
Maximum Operating Altitude Permissible	Without Derating 3000 m
Resistance to Shock acc. to IEC 60068-2-27	Closed, Shock Direction: B1 25 g Open, Shock Direction: B1 5 g Shock Direction: A 30 g Shock Direction: B2 15 g Shock Direction: C1 25 g Shock Direction: C2 25 g
Resistance to Vibrations	4g Closed Position & 2g Open position 5 ... 300 Hz
Pollution Degree	3

Material Compliance

Conflict Minerals Reporting Template (CMRT)	9AKK108467A5658
REACH Declaration	2CMT2021-006202
RoHS Declaration	2CMT2021-006277
RoHS Information	Following EU Directive 2011/65/EU and Amendment 2015/863 July 22, 2019
SCIP	985c900c-1c52-441e-9ef8-189ad537734b China
Simplified SCIP	c0fe3a39-f91c-4e98-9560-ae259339e14b Belgium 3ef78294-3403-47aa-9821-b709595ce32c Bulgaria 55393582-02e7-4351-90ec-d7f12e1c42b1 Estonia f5cad04b-2a5e-4fc7-9dd8-f168a618bd4d Finland 1714317d-48cd-4bfa-8178-7576c107755a Belgium def4f81c-b690-4481-95c3-f85fe209323f Portugal ac2d33e0-b054-4de1-903d-b12ae377a944 Spain 87cd9ee0-e9d2-4f9a-b1cd-6c38fc30d6cc Greece d180bc1c-8501-4867-8bee-8ea533c68bf1 Norway ce1df4b3-2ced-4709-b052-07d587a3f491 Hungary 87c7b1db-75f2-4a5d-abfc-b74f9d3c8f6b Hungary 9a35863b-2625-4170-bc84-0f7975eb33a7 Germany 837a0c89-60e8-47f5-8be2-1ea44f0dd374 Germany b74d9cda-c1aa-4e44-b534-e41cfb48f1ee Sweden 30dfc167-dbd5-4812-919a-8056c0c1f743 Germany 00910b0b-0300-439b-9723-2f2bbcb41e58 Denmark b6ecffbd-8a09-4fcc-92a5-09cf7dcf2c13 Netherlands 785aed0c-6c62-42bb-80c3-f5c47b3b2282 Poland b7c1e8c7-a3e4-4104-982f-8dff0ef39a2 Poland 0ba340ef-9f44-421f-8cb8-8b855a0fcb5 Germany d9c2504e-33d8-43a3-806d-4e8f5005591e Poland 01dae348-827b-4a1f-8034-9a8afb315ff6 France a6d0aa88-03d7-470d-87f8-c450c45cf3bc Sweden b045c12b-2dfa-4a33-a8d6-07d8e1b17d58 Germany 94110c54-a437-4795-a9f8-a07ccb04d598 France 64f0f64c-3a77-4b18-9b44-7d3b1c0ca93b Czech Republic ec3df316-8078-4484-a2b3-dcf266e83097 Croatia
Toxic Substances Control Act - TSCA	2CMT2023-006525
WEEE B2C / B2B	Business To Business
WEEE Category	5. Small Equipment (No External Dimension More Than 50 cm)

ABB EcoSolutions

ABB EcoSolutions	Yes
ABB Site Meeting Group Waste To Landfill Target	No non-hazardous waste is sent to a landfill
End Of Life Disassembling Instructions	1SBC101080M6801
Environmental Product	1SBD250584E3000

Declaration - EPD

Improved Energy Efficiency for Customers	Product Efficiency - Product considered more energy-efficient compared to similar product on market or older products from the same line
Recyclability Rate of the Product acc. to EN45555	Design for Closing Resource Loops - Standard EN45555 - 92.7 %

Certificates and Declarations

A2L Certificate – UL	9AKK108469A4875 9AKK108469A4879
ABS Certificate	ABS_20-2060694-PDA
BV Certificate	BV_2634H24898C0
CB Certificate	CB_SE-113345
CCC Certificate	CCC_2024010304656669
CQC Certificate	CQC2010010304445624 CQC2020010304298240
Declaration of Conformity - CCC	2020980304001253 2020980304001082
Declaration of Conformity - CE	1SBD250000U1000
Declaration of Conformity - UKCA	1SBD250031U1000
DNV Certificate	DNV_TAE00001AF-4
GOST Certificate	GOST_POCCFR.ME77.B07175.pdf
KC Certificate	KC_HW02016-15004C
LR Certificate	LRS_LR23403517TA-02
RINA Certificate	RINA_ELE142224XG
RMRS Certificate	RMRS_1802705280
UL Certificate	UL-US-2150887-5 UL-CA-2142658-5
UL Listing Card	E312527

Container Information

Package Level 1 Units	box 1 piece
Package Level 1 Width	87 mm
Package Level 1 Depth / Length	79 mm
Package Level 1 Height	47 mm
Package Level 1 Gross Weight	0.27 kg
Package Level 1 EAN	3471523110038
Package Level 2 Units	box 27 piece
Package Level 2 Width	250 mm
Package Level 2 Depth / Length	300 mm
Package Level 2 Height	315 mm
Package Level 2 Gross Weight	7.29 kg

External Classifications and Standards

Object Classification Code	Q
ETIM 7	EC000066 - Power contactor, AC switching
ETIM 8	EC000066 - Power contactor, AC switching

ETIM 9	EC000066 - Power contactor, AC switching
eClass	V11.0 : 27371003
UNSPSC	39121529
IDEA Granular Category Code (IGCC)	4758 >> Iec Contactors
E-Number (Finland)	3706201
E-Number (Sweden)	3210009

Categories

Low Voltage Products and Systems → Control Products → Contactors → Block Contactors → AF Contactors → AF09

