PRODUCT-DETAILS

AF09Z-30-01-22

AF09Z-30-01-22 48-130V50/60HZ-DC Contactor



General Information

Extended Product Type	AF09Z-30-01-22
Product ID	1SBL136001R2201
EAN	3471523113329
Catalog Description	AF09Z-30-01-22 48-130V50/60HZ-DC Contactor
Long Description	The AF09Z-30-01-22 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 (48-130 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

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Popular Downloads

Data Sheet, Technical Information	1SBC100214C0202
Instructions and Manuals	1SBC101027M6801
CAD Dimensional Drawing	2CDC001079B0201

Dimensions

Product Net Width	45 mm
Product Net Depth / Length	77 mm
Product Net Height	86 mm
Product Net Weight	0.31 kg

Technical

Number of Main Contacts NO	3
Number of Main Contacts NC	0
Number of Auxiliary Contacts NO	0
Number of Auxiliary Contacts NC	1
Standards	IEC/EN 60947-1, IEC/EN 60947-4-1, UL 60947-4-1, 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 Θ = 40 °C 35 A acc. to IEC 60947-5-1, Θ = 40 °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 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

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	(220 / 230 / 240 V) 2.2 kW
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 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 Ie > 100 A) at 440 V 250 A cos phi=0.45 (cos phi=0.35 for Ie > 100 A) at 690 V 106 A
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
Rated Operational Current DC-1 (I_e)	(110 V) 1-Pole, 40 °C 10 A (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	(110 V) 1-Pole, 40 °C 4 A

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Current DC-5 (I_e)	(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 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 Mechanical Switching Frequency	3600 cycles per hour
Rated Control Circuit Voltage (U_c)	50 Hz 48 ... 130 V 60 Hz 48 ... 130 V DC Operation 48 ... 130 V
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

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	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
Terminal Type	Screw Terminals

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

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
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

Material Compliance

Conflict Minerals Reporting Template (CMRT)	9AKK108467A5658
REACH Declaration	2CMT2021-006202

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RoHS Information	2CMT2021-006277
RoHS Status	Following EU Directive 2011/65/EU and Amendment 2015/863 July 22, 2019
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

Environmental Product Declaration - EPD	1SBD250584E3000 2TFP200035A1001

Certificates and Declarations

ABS Certificate	ABS_20-2060694-PDA
BV Certificate	BV_2634H24898C0
CB Certificate	CB_SE-113345
CCC Certificate	CCC_2010010304445624
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	0.31 kg
Package Level 1 EAN	3471523113329
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	8.37 kg
Package Level 3 Units	1296 piece

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Classifications

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)	3706215

Categories

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



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