PRODUCT-DETAILS

AF09B-40-00-14

AF09B-40-00-14 250-500V50/60HZ-DC Contactor

General Information

Extended Product Type	AF09B-40-00-14
Product ID	1SBL137261R1400
EAN	3471523122741
Catalog Description	AF09B-40-00-14 250-500V50/60HZ-DC Contactor
Long Description	The AF09B-40-00-14 is a 4 pole - 690 V IEC or 600 UL contactor with screw terminals, controlling motors up to 4 kW / 400 V AC (AC-3) 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 (250-500 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

Data Sheet, Technical Information	1SBC100220C0201
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	0.31 kg

Technical

Number of Main Contacts NO	4
Number of Main Contacts NC	0
Number of Auxiliary Contacts NO	0
Number of Auxiliary Contacts NC	0
Number of Poles	4P
Standards	IEC/EN 60947-1, IEC/EN 60947-4-1, UL 60335-2-40 LZGH2 A2L, UL 60947-1, UL 60947-4-1, CSA C22.2 No. 60335-2-40 LZGH2 A2L, CSA C22.2 No. 60947-1, CSA C22.2 No. 60947-4-1, IEC 60077-1 (applicable parts), IEC 60077-2 (applicable parts), EN 50155 (applicable parts), TR CU 001/2011, IEC 61373, For compliance confirmation on applicable parts based on your application and combination, please consult your ABB sales representatives.
Rated Operational Voltage	Main Circuit 690 V
Rated Frequency (f)	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
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 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 (110 V) 4 Poles in Series, 40 °C 25 A

	(110 V) 4 Poles in Series, 60 °C 25 A
	(110 V) 4 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
	(220 V) 4 Poles in Series, 40 °C 25 A
	(220 V) 4 Poles in Series, 60 °C 25 A
	(220 V) 4 Poles in Series, 70 °C 22 A
	(440 V) 4 Poles in Series, 40 °C 10 A
	(440 V) 4 Poles in Series, 60 °C 10 A
	(440 V) 4 Poles in Series, 70 °C 10 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
	(72 V) 4 Poles in Series, 40 °C 25 A
	(72 V) 4 Poles in Series, 60 °C 25 A
	(72 V) 4 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
	(110 V) 4 Poles in Series, 40 °C 25 A
	(110 V) 4 Poles in Series, 60 °C 25 A
	(110 V) 4 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
	(220 V) 4 Poles in Series, 40 °C 25 A
	(220 V) 4 Poles in Series, 60 °C 25 A
	(220 V) 4 Poles in Series, 70 °C 22 A
	(440 V) 4 Poles in Series, 40 °C 6 A
	(440 V) 4 Poles in Series, 60 °C 6 A
	(440 V) 4 Poles in Series, 70 °C 6 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
	(72 V) 4 Poles in Series, 40 °C 25 A
	(72 V) 4 Poles in Series, 60 °C 25 A
	(72 V) 4 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

	(110 V) 4 Poles in Series, 40 °C 25 A (110 V) 4 Poles in Series, 60 °C 25 A (110 V) 4 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 (220 V) 4 Poles in Series, 40 °C 10 A (220 V) 4 Poles in Series, 60 °C 10 A (220 V) 4 Poles in Series, 70 °C 10 A (440 V) 4 Poles in Series, 40 °C 4 A (440 V) 4 Poles in Series, 60 °C 4 A (440 V) 4 Poles in Series, 70 °C 4 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 (72 V) 4 Poles in Series, 40 °C 25 A (72 V) 4 Poles in Series, 60 °C 25 A (72 V) 4 Poles in Series, 70 °C 22 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 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
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
Rated Insulation Voltage (U_i)	acc. to IEC 60947-4-1 690 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
Maximum Mechanical Switching Frequency	3600 cycles per hour
Rated Control Circuit Voltage (U_c)	50 Hz 250 ... 500 V 60 Hz 250 ... 500 V DC Operation 250 ... 500 V
Power Loss	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	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	Control Circuit 10 mm Main Circuit 10 mm
Degree of Protection	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	Control Circuit 1.2 N·m Main Circuit 1.5 N·m
Terminal Type	Screw Terminals
Product Name	Block Contactor

Technical UL/CSA

Maximum Operating Voltage UL/CSA	Main Circuit 600 V
General Use Rating UL/CSA	(600 V AC) 25 A
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	Control Circuit 11 in·lb Main Circuit 13 in·lb

Environmental

Ambient Air Temperature	Close to Contactor for Storage -60 ... +80 °C Near Contactor for Operation in Free Air -40 ... 70 °C
Climatic Withstand	Category B according to IEC 60947-1 Annex Q
Maximum Operating Altitude Permissible	Without Derating 3000 m
Shock and Vibration Withstand acc. to IEC 61373	Category 1, Class B
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
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 Declaration - EPD	1SBD250584E3000
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
CB Certificate	CB_SE-117714
CCC Certificate	CCC_2024010304656669
CQC Certificate	CQC2010010304445624
Declaration of Conformity - CCC	2020980304001253
Declaration of Conformity - CE	1SBD250002U1000
Declaration of Conformity - UKCA	1SBD250033U1000
KC Certificate	KC_HW02016-15007C
UL Certificate	UL-US-L319322-13-72119002-5 UL-CA-L319322-43-72119002-6
UL Listing Card	UL_E319322

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	3471523122741

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

Accessories

Identifier	Description	Type	Quantity	Unit Of Measure
1SBN010110R1010	CA4-10 Auxiliary Contact Block	CA4-10	1	piece
1SBN010110T1010	CA4-10-T Auxiliary Contact Block	CA4-10-T	1	piece
1SBN010110R1001	CA4-01 Auxiliary Contact Block	CA4-01	1	piece
1SBN010110T1001	CA4-01-T Auxiliary Contact Block	CA4-01-T	1	piece
1SBN010120R1011	CAL4-11 Auxiliary Contact Block	CAL4-11	1	piece
1SBN010120T1011	CAL4-11-T Auxiliary Contact Block	CAL4-11-T	1	piece
1SBN010140R1022	CA4-22E Auxiliary Contact Block	CA4-22E	1	piece
1SBN010140R1031	CA4-31E Auxiliary Contact Block	CA4-31E	1	piece
1SBN010140R1040	CA4-40E Auxiliary Contact Block	CA4-40E	1	piece
1SBN010140R1004	CA4-04E Auxiliary Contact Block	CA4-04E	1	piece
1SBN010140R1322	CA4-22U Auxiliary Contact Block	CA4-22U	1	piece
1SBN010140R1122	CA4-22M Auxiliary Contact Block	CA4-22M	1	piece
1SBN010151R1011	CAT4-11E Auxiliary Contact / Coil Terminal Block	CAT4-11E	1	piece
1SBN010140R1331	CA4-31U Auxiliary Contact Block	CA4-31U	1	piece
1SBN010140R1131	CA4-31M Auxiliary Contact Block	CA4-31M	1	piece
1SBN010151R1111	CAT4-11M Auxiliary Contact / Coil Terminal Block	CAT4-11M	1	piece
1SBN010140R1340	CA4-40U Auxiliary Contact Block	CA4-40U	1	piece
1SBN010140R1113	CA4-13M Auxiliary Contact Block	CA4-13M	1	piece
1SBN010151R1311	CAT4-11U Auxiliary Contact / Coil Terminal Block	CAT4-11U	1	piece
1SBN070156T1000	LDC4 Additional Coil Terminal Block	LDC4	1	piece
1SBN010140R1104	CA4-04M Auxiliary Contact Block	CA4-04M	1	piece
1SBN010134R1011	CAL4-11K Auxiliary Contact Block	CAL4-11K	1	piece
1SBN110108T1000	BX4 Protective Cover	BX4	1	piece
1SBN010146R1104	CA4-04MK Auxiliary Contact Block	CA4-04MK	1	piece
1SBN010146R1113	CA4-13MK Auxiliary Contact Block	CA4-13MK	1	piece
1SBN070159T1000	LDC4K Additional Coil Terminal Block	LDC4K	1	piece
1SBN010160R1001	CA4-01K Auxiliary Contact Block	CA4-01K	1	piece
1SBN010146R1022	CA4-22EK Auxiliary Contact Block	CA4-22EK	1	piece
1SBN010160R1010	CA4-10K Auxiliary Contact Block	CA4-10K	1	piece
1SBN010146R1122	CA4-22MK Auxiliary Contact Block	CA4-22MK	1	piece
1SBN010160T1001	CA4-01K-T Auxiliary Contact Block	CA4-01K-T	1	piece
1SBN010160T1010	CA4-10K-T Auxiliary Contact Block	CA4-10K-T	1	piece
1SBN010146R1031	CA4-31EK Auxiliary Contact Block	CA4-31EK	1	piece
1SBN010146R1131	CA4-31MK Auxiliary Contact Block	CA4-31MK	1	piece
1SBN010146R1040	CA4-40EK Auxiliary Contact Block	CA4-40EK	1	piece

Categories

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