



PRODUCT-DETAILS

AF16ZB-40-00-23
AF16ZB-40-00-23 100-250V50/60HZ-DC
Contactor



General Information

Extended Product Type	AF16ZB-40-00-23
Product ID	1SBL176261R2300
EAN	3471523124530
Catalog Description	AF16ZB-40-00-23 100-250V50/60HZ-DC Contactor

Long Description	The AF16ZB-40-00-23 is a 4 pole - 690 V IEC or 600 UL contactor with screw terminals, controlling motors up to 7.5 kW / 400 V AC (AC-3) and switching power circuits up to 30 A (AC-1) or 30 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.
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Ordering

Minimum Order Quantity	1 piece
Customs Tariff Number	85364900

Popular Downloads

Data Sheet, Technical Information	1SBC100220C0201
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	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 30 A (690 V) 60 °C 30 A (690 V) 70 °C 26 A
Rated Operational Current AC-3 (I _e)	(415 V) 60 °C 18 A (440 V) 60 °C 18 A (500 V) 60 °C 15 A (690 V) 60 °C 10.5 A (380 / 400 V) 60 °C 18 A (220 / 230 / 240 V) 60 °C 18 A
Rated Operational Current DC-1 (I _e)	(110 V) 1-Pole, 40 °C 20 A (110 V) 1-Pole, 60 °C 20 A (110 V) 1-Pole, 70 °C 20 A (110 V) 2 Poles in Series, 40 °C 30 A (110 V) 2 Poles in Series, 60 °C 30 A (110 V) 2 Poles in Series, 70 °C 26 A (110 V) 3 Poles in Series, 40 °C 30 A (110 V) 3 Poles in Series, 60 °C 30 A (110 V) 3 Poles in Series, 70 °C 26 A (110 V) 4 Poles in Series, 40 °C 30 A (110 V) 4 Poles in Series, 60 °C 30 A (110 V) 4 Poles in Series, 70 °C 26 A (220 V) 2 Poles in Series, 40 °C 20 A (220 V) 2 Poles in Series, 60 °C 20 A (220 V) 2 Poles in Series, 70 °C 20 A (220 V) 3 Poles in Series, 40 °C 30 A (220 V) 3 Poles in Series, 60 °C 30 A (220 V) 3 Poles in Series, 70 °C 26 A (220 V) 4 Poles in Series, 40 °C 30 A (220 V) 4 Poles in Series, 60 °C 30 A (220 V) 4 Poles in Series, 70 °C 26 A (440 V) 4 Poles in Series, 40 °C 20 A (440 V) 4 Poles in Series, 60 °C 20 A (440 V) 4 Poles in Series, 70 °C 20 A

	(72 V) 1-Pole, 40 °C 30 A
	(72 V) 1-Pole, 60 °C 30 A
	(72 V) 1-Pole, 70 °C 26 A
	(72 V) 2 Poles in Series, 40 °C 30 A
	(72 V) 2 Poles in Series, 60 °C 30 A
	(72 V) 2 Poles in Series, 70 °C 26 A
	(72 V) 3 Poles in Series, 40 °C 30 A
	(72 V) 3 Poles in Series, 60 °C 30 A
	(72 V) 3 Poles in Series, 70 °C 26 A
	(72 V) 4 Poles in Series, 40 °C 30 A
	(72 V) 4 Poles in Series, 60 °C 30 A
	(72 V) 4 Poles in Series, 70 °C 26 A

Rated Operational Current
DC-3 (I_e)

	(110 V) 1-Pole, 40 °C 8 A
	(110 V) 1-Pole, 60 °C 8 A
	(110 V) 1-Pole, 70 °C 8 A
	(110 V) 2 Poles in Series, 40 °C 30 A
	(110 V) 2 Poles in Series, 60 °C 30 A
	(110 V) 2 Poles in Series, 70 °C 26 A
	(110 V) 3 Poles in Series, 40 °C 30 A
	(110 V) 3 Poles in Series, 60 °C 30 A
	(110 V) 3 Poles in Series, 70 °C 26 A
	(110 V) 4 Poles in Series, 40 °C 30 A
	(110 V) 4 Poles in Series, 60 °C 30 A
	(110 V) 4 Poles in Series, 70 °C 26 A
	(220 V) 2 Poles in Series, 40 °C 8 A
	(220 V) 2 Poles in Series, 60 °C 8 A
	(220 V) 2 Poles in Series, 70 °C 8 A
	(220 V) 3 Poles in Series, 40 °C 30 A
	(220 V) 3 Poles in Series, 60 °C 30 A
	(220 V) 3 Poles in Series, 70 °C 26 A
	(220 V) 4 Poles in Series, 40 °C 30 A
	(220 V) 4 Poles in Series, 60 °C 30 A
	(220 V) 4 Poles in Series, 70 °C 26 A
	(440 V) 4 Poles in Series, 40 °C 8 A
	(440 V) 4 Poles in Series, 60 °C 8 A
	(440 V) 4 Poles in Series, 70 °C 8 A
	(72 V) 1-Pole, 40 °C 30 A
	(72 V) 1-Pole, 60 °C 30 A
	(72 V) 1-Pole, 70 °C 26 A
	(72 V) 2 Poles in Series, 40 °C 30 A
	(72 V) 2 Poles in Series, 60 °C 30 A
	(72 V) 2 Poles in Series, 70 °C 26 A
	(72 V) 3 Poles in Series, 40 °C 30 A
	(72 V) 3 Poles in Series, 60 °C 30 A
	(72 V) 3 Poles in Series, 70 °C 26 A
	(72 V) 4 Poles in Series, 40 °C 30 A
	(72 V) 4 Poles in Series, 60 °C 30 A
	(72 V) 4 Poles in Series, 70 °C 26 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 20 A
	(110 V) 2 Poles in Series, 60 °C 20 A
	(110 V) 2 Poles in Series, 70 °C 20 A
	(110 V) 3 Poles in Series, 40 °C 30 A
	(110 V) 3 Poles in Series, 60 °C 30 A
	(110 V) 3 Poles in Series, 70 °C 26 A
	(110 V) 4 Poles in Series, 40 °C 30 A
	(110 V) 4 Poles in Series, 60 °C 30 A
	(110 V) 4 Poles in Series, 70 °C 26 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 16 A
	(220 V) 3 Poles in Series, 60 °C 16 A
	(220 V) 3 Poles in Series, 70 °C 16 A
	(220 V) 4 Poles in Series, 40 °C 20 A
	(220 V) 4 Poles in Series, 60 °C 20 A
	(220 V) 4 Poles in Series, 70 °C 20 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 16 A
	(72 V) 1-Pole, 60 °C 16 A
	(72 V) 1-Pole, 70 °C 16 A
	(72 V) 2 Poles in Series, 40 °C 30 A
	(72 V) 2 Poles in Series, 60 °C 30 A
	(72 V) 2 Poles in Series, 70 °C 26 A
	(72 V) 3 Poles in Series, 40 °C 30 A
	(72 V) 3 Poles in Series, 60 °C 30 A

	(72 V) 3 Poles in Series, 70 °C 26 A (72 V) 4 Poles in Series, 40 °C 30 A (72 V) 4 Poles in Series, 60 °C 30 A (72 V) 4 Poles in Series, 70 °C 26 A
Rated Operational Power AC-3 (P_g)	(400 V) 7.5 kW (415 V) 9 kW (440 V) 9 kW (500 V) 9 kW (690 V) 9 kW (380 / 400 V) 7.5 kW (220 / 230 / 240 V) 4 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 $I_e > 100$ 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 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 100 ... 250 V 60 Hz 100 ... 250 V DC Operation 100 ... 250 V
Power Loss	at Rated Operating Conditions AC-1 per Pole 1.2 W at Rated Operating Conditions AC-3 per Pole 0.35 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 mm ² Flexible with Insulated Ferrule 1x 0.75 ... 4 mm ² Flexible with Insulated Ferrule 2x 0.75 ... 2.5 mm ² Rigid Solid 1/2x 1 ... 4 mm ² Rigid Stranded 1/2x 1 ... 6 mm ²
Connecting Capacity Auxiliary Circuit	Rigid Solid 1/2x 1 ... 2.5 mm ² Rigid Stranded 1/2x 1 ... 2.5 mm ²
Connecting Capacity Control Circuit	Flexible with Ferrule 1/2x 0.75 ... 2.5 mm ² Flexible with Insulated Ferrule 1x 0.75 ... 2.5 mm ² Flexible with Insulated Ferrule 2x 0.75 ... 1.5 mm ² Rigid Solid 1/2x 1 ... 2.5 mm ² Rigid Stranded 1/2x 1 ... 2.5 mm ²
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) 30 A
Connecting Capacity Main Circuit UL/CSA	Rigid Solid 1/2x 16-10 AWG Rigid Stranded 1/2x 16-10 AWG
Connecting Capacity	Rigid Solid 1/2x 18-14 AWG

Auxiliary Circuit UL/CSA	Rigid Stranded 1/2x 18-14 AWG
Connecting Capacity	Rigid Solid 1/2x 18-14 AWG
Control Circuit UL/CSA	Rigid Stranded 1/2x 18-14 AWG
Tightening Torque	Control Circuit 11 in-lb
UL/CSA	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 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
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Certificates and Declarations

A2L Certificate - UL	9AKK108469A4875;9AKK108469A4879
CB Certificate	CB_SE-113345
CCC Certificate	CCC_2010010304445624
CQC Certificate	CQC2010010304445624
Declaration of Conformity - CCC	2020980304001253
Declaration of Conformity - CE	1SBD250002U1000
Declaration of Conformity - UKCA	1SBD250033U1000
GOST Certificate	GOST_POCCFR.ME77.B07175.pdf
KC Certificate	KC_HW02016-15008C
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 /	79 mm

Length	
Package Level 1 Height	47 mm
Package Level 1 Gross Weight	0.31 kg
Package Level 1 EAN	3471523124530
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	16.74 kg
Package Level 3 Units	1296 piece

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 >> lec Contactors

Categories

Low Voltage Products and Systems → Control Products → Contactors → Block Contactors → AF Contactors → AF16

