



**Electric Automation**  
Automation specialists

Reference: AF38Z-30-11-20  
Code: 1SBL296001R2011

AF38Z-30-11-20 12-20VDC Contactor

Buy it at Electric Automation Network



AF38Z contactors are used for controlling power circuits up to 690 V AC and 220 V DC. They are mainly used for controlling 3-phase motors, non-inductive or slightly inductive loads. AF..Z contactors include an electronic coil interface accepting a wide control voltage  $U_c \text{ min.} \dots U_c \text{ max.}$  Only four coils cover control voltages between 24...250 V 50/60 Hz or 12...250 V DC. AF..Z contactors can manage large control voltage variations. One coil can be used for different control voltages used worldwide without any coil change. AF..Z contactors allow direct control by PLC-output  $\geq 24 \text{ V DC } 500 \text{ mA}$  and obtain a reduced holding coil consumption. AF..Z contactors withstand short voltage dips and voltage sags (SEMI F47-0706 compliance) between 24...250 V 50/60 Hz AF..Z contactors have built-in surge protection and do not require additional surge suppressors The AF.. series 2-stack 3-pole contactors are of the block type design. - Main poles and auxiliary contact blocks: 3 main poles with a non-removable front-mounted 1 N.O. + 1 N.C. auxiliary contact block, side-mounted add-on auxiliary contact blocks (mechanically-linked auxiliary contacts compliant with Annex L of IEC 60947-5-1 including the "Mechanically Linked" symbol on the contactor side. N.C. mirror contacts compliant with Annex F of IEC 60947-4-1) - Control circuit: DC operated for AF..Z-30-...-20 contactors. Only AF..Z-30-...-20 contactors need to respect the polarity on the coil terminals (A1+ and A2-). - Accessories: a wide range of accessories is available. Note: 2-stack contactors available in some countries: please consult your ABB representative.

### Ordering

EAN:	3471523114807
Minimum Order Quantity:	1 piece

Customs Tariff Number:	85369085
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## Dimensions

Product Net Width:	45 mm
Product Net Depth:	111.5 mm
Product Net Height:	86 mm
Product Net Weight:	0.390 kg

## Container Information

Package Level 1 Units:	1 piece
Package Level 1 Width:	87 mm
Package Level 1 Length:	114 mm
Package Level 1 Height:	47 mm
Package Level 1 Gross Weight:	0.39 kg
Package Level 1 EAN:	3471523114807
Package Level 2 Units:	36 piece
Package Level 2 Width:	250 mm
Package Level 2 Length:	300 mm
Package Level 2 Height:	315 mm
Package Level 3 Units:	864 piece

## Technical

Number of Main Contacts NO:	3
Number of Main Contacts NC:	0
Number of Auxiliary Contacts NO:	1
Number of Auxiliary Contacts NC:	1
Standards:	IEC 60947-1 / 60947-4-1 and EN 60947-1 / 60947-4-1, UL 508, CSA C22.2 N°14
Rated Operational Voltage:	Auxiliary Circuit 690 V Main Circuit 690 V
Rated Frequency (f):	Auxiliary Circuit 50 / 60 Hz Main Circuit 50 / 60 Hz
Conventional Free-air Thermal Current (I <sub>th</sub> ):	acc. to IEC 60947-4-1, Open Contactors q = 40 °C 50 A acc. to IEC 60947-5-1, q = 40 °C 16 A
Rated Operational Current AC-1 (I <sub>e</sub> ):	(690 V) 40 °C 50 A (690 V) 60 °C 42 A (690 V) 70 °C 37 A

Rated Operational Current AC-3 ( $I_e$ ):	(220 / 230 / 240 V) 60 °C 40 A (380 / 400 V) 60 °C 38 A (415 V) 60 °C 38 A (440 V) 60 °C 38 A (500 V) 60 °C 33 A (690 V) 60 °C 24 A
Rated Operational Power AC-3 ( $P_e$ ):	(220 / 230 / 240 V) 11 kW (380 / 400 V) 18.5 kW (415 V) 18.5 kW (440 V) 22 kW (500 V) 22 kW (690 V) 22 kW
Rated Operational Current AC-15 ( $I_e$ ):	(220 / 240 V) 4 A (24 / 127 V) 6 A (400 / 440 V) 3 A (500 V) 2 A (690 V) 2 A
Rated Short-time Withstand Current ( $I_{cw}$ ):	at 40 °C Ambient Temp, in Free Air, from a Cold State 10 s 350 A at 40 °C Ambient Temp, in Free Air, from a Cold State 15 min 50 A at 40 °C Ambient Temp, in Free Air, from a Cold State 1 min 150 A at 40 °C Ambient Temp, in Free Air, from a Cold State 1 s 700 A at 40 °C Ambient Temp, in Free Air, from a Cold State 30 s 225 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 500 A cos phi=0.45 (cos phi=0.35 for $I_e > 100$ A) at 690 V 200 A
Maximum Electrical Switching Frequency:	AC-1 600 cycles per hour AC-15 1200 cycles per hour AC-2 / AC-4 150 cycles per hour AC-3 1200 cycles per hour DC-13 900 cycles per hour
Rated Operational Current DC-13 ( $I_e$ ):	(110 V) 0.55 A / 60 W (125 V) 0.55 A / 69 W (220 V) 0.27 A / 60 W (24 V) 6 A / 144 W (250 V) 0.27 A / 68 W (400 V) 0.15 A / 60 W (48 V) 2.8 A / 134 W (500 V) 0.13 A / 65 W (600 V) 0.1 A / 60 W (72 V) 1 A / 72 W
Rated Insulation Voltage ( $U_i$ ):	acc. to UL/CSA 600 V acc. to IEC 60947-4-1 and VDE 0110 (Gr. C) 690 V
Rated Impulse Withstand Voltage ( $U_{imp}$ ):	6 kV
Maximum Mechanical Switching Frequency:	3600 cycles per hour
Rated Control Circuit Voltage ( $U_c$ ):	DC Operation 12 ... 20 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
Connecting Capacity-Main Circuit:	Flexible with Insulated Ferrule 1x 1.5...10 mm <sup>2</sup> Flexible with Insulated Ferrule 2x 1.5...4 mm <sup>2</sup> Flexible with Ferrule 1/2x 1.5...10 mm <sup>2</sup> Rigid 1/2x 2.5...10 mm <sup>2</sup>
Connecting Capacity-Auxiliary Circuit:	Flexible with Ferrule 1/2x 0.75 ... 2.5 mm <sup>2</sup> Flexible with Insulated Ferrule 1x 0.75 ... 2.5 mm <sup>2</sup> Flexible with Insulated Ferrule 2x 0.75 ... 1.5 mm <sup>2</sup> Rigid 1/2x 1...2.5 mm <sup>2</sup>
Connecting Capacity-Control Circuit:	Flexible with Ferrule 1/2x 0.75 ... 2.5 mm <sup>2</sup> Flexible with Insulated Ferrule 1x 0.75...2.5 mm <sup>2</sup> Flexible with Insulated Ferrule 2x 0.75...1.5 mm <sup>2</sup> Rigid 1/2x 1...2.5 mm <sup>2</sup>
Wire Stripping Length:	Auxiliary Circuit 10 mm Control Circuit 10 mm Main Circuit 14 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

## Environmental

Ambient Air Temperature:	Close to Contactor for Storage -60...+80 °C Close to Contactor Fitted with Thermal O/L Relay -25 ... +60 °C Close to Contactor without Thermal O/L Relay -40 ... +70 °C
Maximum Operating Altitude Permissible:	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 acc. to IEC 60068-2-6:	5...300 Hz 4 g closed position / 2 g open position
RoHS Status:	Planned to follow EU Directive 2002/95/EC August 18, 2005 and amendment after 2008 Q1

## Technical UL/CSA

General Use Rating UL/CSA:	(600 V AC) 50 A
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Horsepower Rating UL/CSA:	(120 V AC) Single Phase 2 Hp (240 V AC) Single Phase 5 Hp (200 ... 208 V AC) Three Phase 10 Hp (220 ... 240 V AC) Three Phase 10 Hp (440 ... 480 V AC) Three Phase 25 Hp (550 ... 600 V AC) Three Phase 30 Hp
Tightening Torque UL/CSA:	Auxiliary Circuit 11 in·lb Control Circuit 11 in·lb Main Circuit 22 in·lb

## Certificates and Declarations (Document Number)

ABS Certificate:	ABS_15-GE1349500-PDA_90682247
CB Certificate:	CB_SE_70856M1
CCC Certificate:	CCC_2010010304445623
cUL Certificate:	UL_20091124-E312527-7-1
Declaration of Conformity - CE:	1SBD250165C1000
DNV Certificate:	DNV-GL_E13871
EAC Certificate:	EAC_RU C-FR ME77 B01010
GL Certificate:	DNV-GL_E13871
GOST Certificate:	GOST_POCCFR.ME77.B07175.pdf
LR Certificate:	LRS_1300087E1
RINA Certificate:	RINA_ELE084013XG
RMRS Certificate:	RMRS_1400682124
RoHS Information:	1SBD251012E1000

## Classifications

ETIM 5:	EC000066 - Magnet contactor, AC-switching
UNSPSC:	39121529