

## General Information

Extended Product Type:	AF16Z-30-01-21
Product ID:	1SBL176001R2101
EAN:	3471523113916
Catalog Description:	AF16Z-30-01-21 24-60V50/60HZ 20-60VDC Contactor
Long Description:	AF16Z 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 1-stack 3-pole contactors are of the block type design. - Main poles and auxiliary contact blocks: 3 main poles, 1 built-in auxiliary contact, front and side-mounted add-on auxiliary contact blocks. (mechanically-linked auxiliary contacts compliant with Annex L of IEC 60947-5-1. N.C. mirror contacts compliant with Annex F of IEC 60947-4-1) - Control circuit: AC or DC operated - Accessories: a wide range of accessories is available.

## Categories

Products » Low Voltage Products and Systems » Control Products » Contactors » Block Contactors

## Ordering

Minimum Order Quantity:	1 piece
Customs Tariff Number:	85369085
EAN:	3471523113916

## Dimensions

Product Net Depth:	77 mm
Product Net Height:	86 mm
Product Net Weight:	0.310 kg
Product Net Width:	45 mm

## Container Information

Package Level 1 Width:	87 mm
Package Level 1 Length:	79 mm
Package Level 1 Height:	47 mm
Package Level 1 Gross Weight:	0.31 kg
Package Level 1 EAN:	3471523113916
Package Level 2 Units:	54 piece
Package Level 2 Width:	250 mm
Package Level 2 Length:	300 mm
Package Level 2 Height:	315 mm
Package Level 3 Units:	1296 piece
Package Level 1 Units:	1 piece

## Technical

Number of Main Contacts NC:	0
Number of Auxiliary Contacts NO:	0
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 ( $I_{th}$ ):	acc. to IEC 60947-4-1, Open Contactors $q = 40 \text{ }^\circ\text{C } 35 \text{ A}$ acc. to IEC 60947-5-1, $q = 40 \text{ }^\circ\text{C } 16 \text{ A}$
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 ( $I_e$ ):	(220 / 230 / 240 V) 60 °C 18 A (380 / 400 V) 60 °C 18 A (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
<b>Rated Operational Power AC-3 (P<sub>e</sub>):</b>	(220 / 230 / 240 V) 4 kW (380 / 400 V) 7.5 kW (400 V) 7.5 kW (415 V) 9 kW (440 V) 9 kW (500 V) 9 kW (690 V) 9 kW
<b>Rated Operational Current AC-15 (I<sub>e</sub>):</b>	(220 / 240 V) 4 A (24 / 127 V) 6 A (400 / 440 V) 3 A (500 V) 2 A (690 V) 2 A
<b>Rated Short-time Withstand Current (I<sub>cw</sub>):</b>	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
<b>Maximum Breaking Capacity:</b>	cos phi=0.45 (cos phi=0.35 for I <sub>e</sub> > 100 A) at 440 V 250 A cos phi=0.45 (cos phi=0.35 for I <sub>e</sub> > 100 A) at 690 V 106 A
<b>Maximum Electrical Switching Frequency:</b>	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
<b>Rated Operational Current DC-13 (I<sub>e</sub>):</b>	(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
<b>Rated Insulation Voltage (U<sub>i</sub>):</b>	acc. to UL/CSA 600 V acc. to IEC 60947-4-1 and VDE 0110 (Gr. C) 690 V
<b>Rated Impulse Withstand Voltage (U<sub>imp</sub>):</b>	6 kV
<b>Maximum Mechanical Switching Frequency:</b>	3600 cycles per hour
<b>Rated Control Circuit Voltage (U<sub>c</sub>):</b>	50 Hz 24 ... 60 V 60 Hz 24 ... 60 V DC Operation 20 ... 60 V
<b>Operate Time:</b>	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
<b>Connecting Capacity Main Circuit:</b>	Flexible with Insulated Ferrule 1x 0.75...4 mm <sup>2</sup> Flexible with Insulated Ferrule 2x 0.75...2.5 mm <sup>2</sup> Flexible with Ferrule 1/2x 0.75...6 mm <sup>2</sup> Rigid 1/2x 1...6 mm <sup>2</sup>
<b>Connecting Capacity Auxiliary Circuit:</b>	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>
<b>Connecting Capacity Control Circuit:</b>	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>
<b>Wire Stripping Length:</b>	Auxiliary Circuit 10 mm Control Circuit 10 mm Main Circuit 10 mm
<b>Degree of Protection:</b>	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
<b>Terminal Type:</b>	Screw Terminals
<b>Number of Main Contacts NO:</b>	3

## Environmental

<b>Climatic Withstand:</b>	Category B according to IEC 60947-1 Annex Q
<b>Maximum Operating Altitude Permissible:</b>	3000 m

**Resistance to Vibrations acc. to IEC 60068-2-6:** 5 ... 300 Hz 4 g closed position / 2 g open position

**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

**RoHS Status:** Planned to follow EU Directive 2002/95/EC August 18, 2005 and amendment after 2008 Q1

**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

## Technical UL/CSA

**General Use Rating UL/CSA:** (600 V AC) 30 A

**Horsepower Rating UL/CSA:** (120 V AC) Single Phase 1-1/2 Hp  
(240 V AC) Single Phase 3 Hp  
(200 ... 208 V AC) Three Phase 5 Hp  
(220 ... 240 V AC) Three Phase 5 Hp  
(440 ... 480 V AC) Three Phase 10 Hp  
(550 ... 600 V AC) Three Phase 15 Hp

**Tightening Torque UL/CSA:** Auxiliary Circuit 11 in·lb  
Control Circuit 11 in·lb  
Main Circuit 13 in·lb

## Certificates and Declarations (Document Number)

**Instructions and Manuals:** 1SBC101027M6801

**ABS Certificate:** ABS\_15-GE1349500-PDA\_90682247

**CB Certificate:** CB\_SE\_70855M1

**CCC Certificate:** CCC\_2010010304445624

**Data Sheet, Technical Information:** 1SBC101408D0201

**Declaration of Conformity - CE:** 1SBD250000U1000

**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:** 1SBD251013E1000

**UL Certificate:** UL\_20140305-E312527\_7\_1

**UL Listing Card:** E312527

## Classifications

**E-number:** 3211369

**ETIM 4:** EC000066 - Magnet contactor, AC-switching

**ETIM 5:** EC000066 - Magnet contactor, AC-switching

**ETIM 6:** EC000066 - Power contactor, AC switching

**UNSPSC:** 39121529

**Object Classification Code:** Q

