

Representative Image

# Alternate Catalog No. AF16Z-30-22-20
# Catalog No. 1SBL176001R2022

**Description: AF16Z-30-22-20 12-20VDC Contactor**

**UPC No 3471523114005**

**Home > Contactors & Starters > UL Listed IEC Contactors > AF Contactors**

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 Uc min. ... Uc 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 ≥ 24 V DC 500 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 2 N.O. + 2 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.

## Descriptors

| | |
|---|---|
| Category | AF Contactors |
| Block Contactor Type | 3-Pole Contactor |

## Specifications

| | |
|---|---|
| Product Type | AF |
| General Use Rating UL/CSA | (600 V AC) 30 A |
| Object Classification Code | Q |
| Terminal Type | Screw Terminals |
| Rated Control Circuit Voltage | DC Operation 12 ... 20 V |
| Number of Main Contacts NO | 3 |
| Number of Main Contacts NC | 0 |
| Climatic Withstand | Category B according to IEC 60947-1 Annex Q |
| Resistance to Vibrations acc. to IEC 60068-2-6 | 5 ... 300 Hz 4 g closed position / 2 g open position |
| Number of Auxiliary Contacts NO | 2 |
| RoHS Status | Following EU Directive 2011/65/EU |
| Reference Ambient Air Temperature | Close to Contactor for Storage -60 ... +80 °C<br>Close to Contactor without Thermal O/L Relay -40 ... +70 °C<br>Close to Contactor Fitted with Thermal O/L Relay -25 ... +60 °C |
| Rated Operational Voltage | Auxiliary Circuit 690 V<br>Main Circuit 690 V |
| Resistance to Shock acc. to IEC 60068-2-27 | Shock Direction: A 30 K40<br>Shock Direction: B2 15 K40<br>Shock Direction: C1 25 K40<br>Shock Direction: C2 25 K40<br>Closed, Shock Direction: B1 25 K40<br>Open, Shock Direction: B1 5 K40 |
| Number of Auxiliary Contacts NC | 2 |
| Tightening Torque UL/CSA | Auxiliary Circuit 11 IA<br>Control Circuit 11 IA<br>Main Circuit 13 IA |
| Maximum Operating Altitude Permissible | 3000 m |

by ABB

## Specifications

| | |
|---|---|
| Rated Operational Current AC-1 | (690 V) 40 °C 30 A<br>(690 V) 60 °C 30 A<br>(690 V) 70 °C 26 A |
| Standards | IEC 60947-1 / 60947-4-1 and EN 60947-1 / 60947-4-1, UL 508, CSA C22.2 N°14 |
| Rated Operational Power AC-3 | (220 / 230 / 240 V) 4 KWT<br>(380 / 400 V) 7.5 KWT<br>(415 V) 9 KWT<br>(440 V) 9 KWT<br>(500 V) 9 KWT<br>(690 V) 9 KWT<br>(400 V) 7.5 KWT |
| Horsepower Rating UL/CSA | (220 ... 240 V AC) Three Phase 5 hp<br>(440 ... 480 V AC) Three Phase 10 hp<br>(550 ... 600 V AC) Three Phase 15 hp<br>(120 V AC) Single Phase 1-1/2 hp<br>(200 ... 208 V AC) Three Phase 5 hp<br>(240 V AC) Single Phase 3 hp |
| Conventional Free-air Thermal Current | acc. to IEC 60947-5-1, q = 40 °C 16 A<br>acc. to IEC 60947-4-1, Open Contactors q = 40 °C 35 A |
| Rated Operational Current AC-15 | (220 / 240 V) 4 A<br>(24 / 127 V) 6 A<br>(500 V) 2 A<br>(690 V) 2 A<br>(400 / 440 V) 3 A |
| Rated Frequency | Auxiliary Circuit 50 Hz<br>Auxiliary Circuit 60 Hz<br>Main Circuit 50Hz<br>Main Circuit 60 Hz |
| Rated Short-time Withstand Current | at 40 °C Ambient Temp, in Free Air, from a Cold State 10 s 150 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 15 min 35 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 1 min 60 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 1 s 300 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 30 s 80 A<br>for 0.1 s 140 A<br>for 1 s 100 A |
| Rated Operational Current AC-3 | (220 / 230 / 240 V) 60 °C 18 A<br>(380 / 400 V) 60 °C 18 A<br>(415 V) 60 °C 18 A<br>(440 V) 60 °C 18 A<br>(500 V) 60 °C 15 A<br>(690 V) 60 °C 10.5 A |
| Maximum Electrical Switching Frequency | AC-1 600 cycles per hour<br>AC-2 / AC-4 300 cycles per hour<br>AC-3 1200 cycles per hour<br>AC-15 1200 cycles per hour<br>DC-13 900 cycles per hour |
| Rated Insulation Voltage | acc. to UL/CSA 600 V<br>acc. to IEC 60947-4-1 and VDE 0110 (Gr. C) 690 V |
| Maximum Breaking Capacity | cos phi=0.45 (cos phi=0.35 for Ie > 100 A) at 440 V 250 A<br>cos phi=0.45 (cos phi=0.35 for Ie > 100 A) at 690 V 106 A |
| Maximum Mechanical Switching Frequency | 3600 cycles per hour |
| Operate Time | Between Coil De-energization and NC Contact Closing 13 ... 98 ms<br>Between Coil De-energization and NO Contact Opening 11 ... 95 ms<br>Between Coil Energization and NC Contact Opening 38 ... 90 ms<br>Between Coil Energization and NO Contact Closing 40 ... 95 ms |
| Secondary Rated Impulse Withstand Voltage | 6 kV |
| Connecting Capacity Main Circuit | Rigid 1/2x 1 ... 6 m²<br>Flexible with Ferrule 1/2x 0.75 ... 6 m²<br>Flexible with Insulated Ferrule 1x 0.75 ... 4 m²/2x 0.75 ... 2.5 m² |
| Rated Operational Current DC-13 | (125 V) 0.55 A / 69 W<br>(24 V) 6 A / 144 W<br>(250 V) 0.27 A / 68 W<br>(48 V) 2.8 A / 134 W<br>(72 V) 1 A / 72 W<br>(110 V) 0.55 A / 60 W<br>(220 V) 0.27 A / 60 W<br>(400 V) 0.15 A / 60 W<br>(500 V) 0.13 A / 65 W<br>(600 V) 0.1 A / 60 W |

## Specifications

| | |
|---|---|
| Connecting Capacity Control Circuit | Flexible with Ferrule 1/2x 0.75 ... 2.5 m²<br>Flexible with Insulated Ferrule 1x 0.75 ... 2.5 m²/2x 0.75 ... 1.5 m²<br>Rigid 1/2x 1 ... 2.5 m² |
| Degree of Protection | acc. to IEC 60529, IEC 60947-1, EN 60529 Auxiliary Terminals IP20<br>acc. to IEC 60529, IEC 60947-1, EN 60529 Coil Terminals IP20<br>acc. to IEC 60529, IEC 60947-1, EN 60529 Main Terminals IP20 |
| Connecting Capacity Auxiliary Circuit | Flexible with Ferrule 1/2x 0.75 ... 2.5 m²<br>Flexible with Insulated Ferrule 1x 0.75 ... 2.5/2x 0.75 ... 1.5 m²<br>Rigid 1/2x 1 ... 2.5 m² |
| Screw Terminal Type | Screw Terminals |
| Wire Stripping Length | Auxiliary Circuit 10 mm<br>Control Circuit 10 mm<br>Main Circuit 10 mm |

## Classifications

| | |
|---|---|
| ETIM 4 | EC000066 - Magnet contactor, AC-switching |
| ETIM 6.0 | EC000066 - Power contactor, AC switching |
| ETIM 7 | EC000066 - Power contactor, AC switching |
| ETIM 5.0 | EC000066 - Magnet contactor, AC-switching |

## Dimensions

| | |
|---|---|
| Product Net Weight | 0.36 kg |
| Product Net Depth / Length | 110.5 mm |
| Product Net Width | 45 mm |
| Product Net Height | 86 mm |

## Package Information

| | |
|---|---|
| Package Level 1 Width | 87 mm |
| Package Level 1 Height | 47 mm |
| Package Level 1 Depth / Length | 113 mm |
| Package Level 1 EAN | 3471523114005 |
| Package Level 1 Units | box 1 piece |
| Package Level 2 Width | 250 mm |
| Package Level 2 Height | 315 mm |
| Package Level 1 Gross Weight | 0.36 kg |
| Package Level 2 Units | 18 piece |
| Package Level 3 Units | 864 piece |
| Package Level 2 Depth / Length | 300 mm |
| Package Level 2 Gross Weight | 6.48 kg |

## Ordering

| | |
|---|---|
| Minimum Order Quantity | 1 |
| Customs Tariff Number | 85364900 |