



Representative Image

## Alternate Catalog No. AF16Z-30-01-21 Catalog No. 1SBL176001R2101

**Description:** AF16Z-30-01-21 24-60V50/60HZ 20-60VDC Contactor

**UPC No** 3471523113916

**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  $U_c$  min. ...  $U_c$  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  $\geq 24$  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 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.

### 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                  | 50 Hz /60 Hz 24 ... 60 V<br>DC Operation 20 ... 60 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                | 0                                                                                                                                                                                            |
| 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                | 1                                                                                                                                                                                            |
| 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 I <sub>e</sub> > 100 A) at 440 V 250 A<br>cos phi=0.45 (cos phi=0.35 for I <sub>e</sub> > 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 m <sup>2</sup><br>Flexible with Ferrule 1/2x 0.75 ... 6 m <sup>2</sup><br>Flexible with Insulated Ferrule 1x 0.75 ... 4 m <sup>2</sup> /2x 0.75 ... 2.5 m <sup>2</sup>                                                                                                                                                                                           |
| 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 m <sup>2</sup><br>Flexible with Insulated Ferrule 1x 0.75 ... 2.5 m <sup>2</sup> /2x 0.75 ... 1.5 m <sup>2</sup><br>Rigid 1/2x 1 ... 2.5 m <sup>2</sup>   |
| 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 m <sup>2</sup><br>Flexible with Insulated Ferrule 1x 0.75 ... 2.5/2x 0.75 ... 1.5 m <sup>2</sup><br>Rigid 1/2x 1 ... 2.5 m <sup>2</sup>                   |
| 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         | 0.31kg |
| Product Net Depth / Length | 77 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 | 79 mm         |
| Package Level 1 EAN            | 3471523113916 |
| Package Level 1 Units          | box 1 piece   |
| Package Level 2 Width          | 250 mm        |
| Package Level 2 Height         | 315 mm        |
| Package Level 1 Gross Weight   | 0.31 kg       |
| Package Level 2 Units          | 27 piece      |
| Package Level 3 Units          | 1296 piece    |
| Package Level 2 Depth / Length | 300 mm        |
| Package Level 2 Gross Weight   | 8.37 kg       |

## Ordering

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