Representative Image

# Alternate Catalog No. AF09ZB-30-10-21
# Catalog No. 1SBL136061R2110

**Description: AF09ZB-30-10-21 24-60V50/60HZ 20-60VDC Contactor**

**UPC No 3471523123519**

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

AF09ZB 3-pole contactors comply with the latest railway rolling stock standards and allow installation in passengers or driver cabins for trains frequently operating tunnels or undergrounds. They are mainly used for controlling 3-phase motors and power circuits up to 690 V AC and 220 V DC. Improve the compactness of the installations thanks to reduced dimension and side-by-side mounting requiring less 15% width (without spacing) from -40 °C up to +70 °C. Meet all main rollling stocks standards: IEC 60947-4-1, IEC 60947-5-1, IEC 60077-1/-2 and applicable parts of EN 50155 standards, shocks and vibration withstand conforming to IEC 61373 cat. 1, class B. Reach the highest levels in fire and smoke behaviour with compliance to European standard EN 45545-2 (HL2, HL3 hazard levels) in group mounting. Reduce train energy with lighter devices and requiring 68% less coil energy consumption in operation. Electronic coil interface handling large DC voltage fluctuation voltage, including several Uc DC control voltages used for battery supply and accepting sinusoïdal AC 50/60 Hz control supplies included inside Ucmin.... Ucmax voltage range. Max permitted AC 50/60 Hz control voltage must not be exceeded (see technical data). Wide range of auxiliary contact blocks for front and side mounting.

## Descriptors

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

## Specifications

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|---|---|
| Product Type | AF |
| General Use Rating UL/CSA | (600 V AC) 25 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 |
| Number of Auxiliary Contacts NO | 1 |
| 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 |
| Number of Auxiliary Contacts NC | 0 |
| Maximum Operating Altitude Permissible | 3000 m |
| Rated Operational Current AC-1 | (690 V) 40 °C 25 A<br>(690 V) 60 °C 25 A<br>(690 V) 70 °C 22 A |
| Rated Operational Power AC-3 | (220 / 230 / 240 V) 2.2 KWT<br>(380 / 400 V) 4 KWT<br>(415 V) 4 KWT<br>(440 V) 4 KWT<br>(500 V) 5.5 KWT<br>(690 V) 5.5 KWT |

## Specifications

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|---|---|
| Horsepower Rating UL/CSA | (220 ... 240 V AC) Three Phase 2 hp<br>(440 ... 480 V AC) Three Phase 5 hp<br>(550 ... 600 V AC) Three Phase 7-1/2 hp<br>(120 V AC) Single Phase 3/4 hp<br>(200 ... 208 V AC) Three Phase 2 hp<br>(240 V AC) Single Phase 1-1/2 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 9 A<br>(380 / 400 V) 60 °C 9 A<br>(415 V) 60 °C 9 A<br>(440 V) 60 °C 9 A<br>(500 V) 60 °C 9.5 A<br>(690 V) 60 °C 7 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 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 |
| 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 |
| Screw Terminal Type | Screw Terminals |
| Wire Stripping Length | Main Circuit 10 mm |

## Classifications

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

## Classifications

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| ETIM 5.0 | EC000066 - Magnet contactor, AC-switching |

## Dimensions

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| Product Net Weight | 0.31kg |
| Product Net Depth / Length | 77 mm |
| Product Net Width | 45 mm |
| Product Net Height | 86 mm |

## Package Information

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| Package Level 1 Width | 87 mm |
| Package Level 1 Height | 47 mm |
| Package Level 1 Depth / Length | 79 mm |
| Package Level 1 EAN | 3471523123519 |
| 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 | 16.74 kg |

## Ordering

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