

# AF09-30-10-13



AF09-30-10-13 100-250V50/60HZ-DC Contactor

## General Information

|                       |   |
|-----------------------|---|
| Extended Product Type | AF09-30-10-13   |
| Product ID            | 1SBL137001R1310   |
| EAN                   | 3471523110038   |
| Catalog Description   | AF09-30-10-13 100-250V50/60HZ-DC Contactor  |
| Long Description      | <p>AF09 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... contactors include an electronic coil interface accepting a wide control voltage <math>U_c \text{ min.} \dots U_c \text{ max.}</math> Only four coils cover control voltages between 24...500 V 50/60 Hz or 20...500 V DC. AF contactors can manage large control voltage variations. One coil can be used for different control voltages used worldwide without any coil change. AF 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.</p> |

## Ordering

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

## Popular Downloads

|                                   |                 |
|-----------------------------------|-----------------|
| Data Sheet, Technical Information | 1SBC101401D0201 |
| Instructions and Manuals          | 1SBC101027M6801 |

## Dimensions

|                            |         |
|----------------------------|---------|
| Product Net Width          | 45 mm   |
| Product Net Depth / Length | 77 mm   |
| Product Net Height         | 86 mm   |
| Product Net Weight         | 0.27 kg |

## Technical

|                                 |   |
|---------------------------------|---|
| Number of Main Contacts NO      | 3 |
| Number of Main Contacts NC      | 0 |
| Number of Auxiliary Contacts NO | 1 |
| Number of Auxiliary Contacts NC | 0 |

|  |  |
|--|--|
| 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<br>Main Circuit 690 V  |
| Rated Frequency (f)                                | Auxiliary Circuit 50 / 60 Hz<br>Main Circuit 50 / 60 Hz  |
| Conventional Free-air Thermal Current ( $I_{th}$ ) | acc. to IEC 60947-4-1, Open Contactors $q = 40\text{ °C}$ 35 A<br>acc. to IEC 60947-5-1, $q = 40\text{ °C}$ 16 A   |
| Rated Operational Current AC-1 ( $I_e$ )           | (690 V) $40\text{ °C}$ 25 A<br>(690 V) $60\text{ °C}$ 25 A<br>(690 V) $70\text{ °C}$ 22 A  |
| Rated Operational Current AC-3 ( $I_e$ )           | (220 / 230 / 240 V) $60\text{ °C}$ 9 A<br>(380 / 400 V) $60\text{ °C}$ 9 A<br>(415 V) $60\text{ °C}$ 9 A<br>(440 V) $60\text{ °C}$ 9 A<br>(500 V) $60\text{ °C}$ 9.5 A<br>(690 V) $60\text{ °C}$ 7 A   |
| Rated Operational Power AC-3 ( $P_e$ )             | (220 / 230 / 240 V) 2.2 kW<br>(380 / 400 V) 4 kW<br>(400 V) 4 kW<br>(415 V) 4 kW<br>(440 V) 4 kW<br>(500 V) 5.5 kW<br>(690 V) 5.5 kW   |
| Rated Operational Current AC-15 ( $I_e$ )          | (220 / 240 V) 4 A<br>(24 / 127 V) 6 A<br>(400 / 440 V) 3 A<br>(500 V) 2 A<br>(690 V) 2 A   |
| Rated Short-time Withstand Current ( $I_{cw}$ )    | at $40\text{ °C}$ Ambient Temp, in Free Air, from a Cold State 10 s 150 A<br>at $40\text{ °C}$ Ambient Temp, in Free Air, from a Cold State 15 min 35 A<br>at $40\text{ °C}$ Ambient Temp, in Free Air, from a Cold State 1 min 60 A<br>at $40\text{ °C}$ Ambient Temp, in Free Air, from a Cold State 1 s 300 A<br>at $40\text{ °C}$ 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 |
| Maximum Breaking Capacity                          | $\cos\phi=0.45$ ( $\cos\phi=0.35$ for $I_e > 100$ A) at 440 V 250 A<br>$\cos\phi=0.45$ ( $\cos\phi=0.35$ for $I_e > 100$ A) at 690 V 106 A   |
| Maximum Electrical Switching Frequency             | AC-1 600 cycles per hour<br>AC-15 1200 cycles per hour<br>AC-2 / AC-4 300 cycles per hour<br>AC-3 1200 cycles per hour<br>DC-13 900 cycles per hour  |
| Rated Operational Current DC-13 ( $I_e$ )          | (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<br>(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  |
| Rated Insulation Voltage ( $U_i$ )                 | acc. to UL/CSA 600 V<br>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 ( $U_c$ )            | 50 Hz 100 ... 250 V<br>60 Hz 100 ... 250 V<br>DC Operation 100 ... 250 V   |
| 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   |
| Connecting Capacity Main Circuit                   | Flexible with Insulated Ferrule 1x 0.75 ... 4 mm <sup>2</sup><br>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><br>Rigid 1/2x 1 ... 6 mm <sup>2</sup>   |
| Connecting Capacity Auxiliary Circuit | Flexible with Ferrule 1/2x 0.75 ... 2.5 mm <sup>2</sup><br>Flexible with Insulated Ferrule 1x 0.75 ... 2.5 mm <sup>2</sup><br>Flexible with Insulated Ferrule 2x 0.75 ... 1.5 mm <sup>2</sup><br>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><br>Flexible with Insulated Ferrule 1x 0.75 ... 2.5 mm <sup>2</sup><br>Flexible with Insulated Ferrule 2x 0.75 ... 1.5 mm <sup>2</sup><br>Rigid 1/2x 1 ... 2.5 mm <sup>2</sup> |
| Wire Stripping Length                 | Auxiliary Circuit 10 mm<br>Control Circuit 10 mm<br>Main Circuit 10 mm  |
| 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                                     |
| Terminal Type                         | Screw Terminals   |

## Environmental

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|--|--|
| Ambient Air Temperature                        | Close to Contactor for Storage -60 ... +80 °C<br>Close to Contactor Fitted with Thermal O/L Relay -25 ... +60 °C<br>Close to Contactor without Thermal O/L Relay -40 ... +70 °C  |
| Climatic Withstand                             | Category B according to IEC 60947-1 Annex Q  |
| Maximum Operating Altitude Permissible         | 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<br>Open, Shock Direction: B1 5 g<br>Shock Direction: A 30 g<br>Shock Direction: B2 15 g<br>Shock Direction: C1 25 g<br>Shock Direction: C2 25 g |

## Technical UL/CSA

|                           |  |
|---------------------------|--|
| General Use Rating UL/CSA | (600 V AC) 25 A  |
| Horsepower Rating UL/CSA  | (120 V AC) Single Phase 3/4 Hp<br>(240 V AC) Single Phase 1-1/2 Hp<br>(200 ... 208 V AC) Three Phase 2 Hp<br>(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 |
| Tightening Torque UL/CSA  | Auxiliary Circuit 11 in-lb<br>Control Circuit 11 in-lb<br>Main Circuit 13 in-lb  |

## Certificates and Declarations (Document Number)

|                                |                               |
|--------------------------------|-------------------------------|
| ABS Certificate                | ABS_15-GE1349500-PDA_90682247 |
| BV Certificate                 | BV_2634H24898B0               |
| CB Certificate                 | CB_SE-80871M3                 |
| CCC Certificate                | CCC_2010010304445624          |
| cUL Certificate                | UL_20180227_E312527_7_1       |
| Declaration of Conformity - CE | 1SBD250000U1000               |
| DNV Certificate                | DNV-GL_TAE00001AF-3           |
| DNV GL Certificate             | DNV-GL_TAE00001AF-3           |
| EAC Certificate                | EAC_RU C-FR ME77 B01010       |

|                           |                             |
|---------------------------|-----------------------------|
| Environmental Information | 1SBD250147E1000             |
| GL Certificate            | DNV-GL_TAE00001AF-3         |
| GOST Certificate          | GOST_POCCFR.ME77.B07175.pdf |
| Instructions and Manuals  | 1SBC101027M6801             |
| KC Certificate            | KC_HW02016-15004A           |
| LR Certificate            | LRS_1300087E1               |
| RINA Certificate          | RINA_ELE084013XG            |
| RMRS Certificate          | RMRS_1802705280             |
| RoHS Information          | 1SBD251013E1000             |
| UL Certificate            | UL_20140305-E312527_7_1     |
| UL Listing Card           | E312527                     |

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## Container Information

|                                |               |
|--------------------------------|---------------|
| Package Level 1 Units          | 1 piece       |
| Package Level 1 Width          | 87 mm         |
| Package Level 1 Depth / Length | 79 mm         |
| Package Level 1 Height         | 47 mm         |
| Package Level 1 Gross Weight   | 0.27 kg       |
| Package Level 1 EAN            | 3471523110038 |
| Package Level 2 Units          | 54 piece      |
| Package Level 2 Width          | 250 mm        |
| Package Level 2 Depth / Length | 300 mm        |
| Package Level 2 Height         | 315 mm        |
| Package Level 2 Gross Weight   | 14.58 kg      |
| Package Level 3 Units          | 1296 piece    |

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## Classifications

|                            |   |
|----------------------------|---|
| Object Classification Code | Q   |
| E-nummer                   | 3210009                                   |
| ETIM 4                     | EC000066 - Magnet contactor, AC-switching |
| ETIM 5                     | EC000066 - Magnet contactor, AC-switching |
| ETIM 6                     | EC000066 - Power contactor, AC switching  |
| ETIM 7                     | EC000066 - Power contactor, AC switching  |
| UNSPSC                     | 39121529                                  |

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## Categories

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

