

## PRODUCT-DETAILS

# 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

The AF09-30-10-13 is a 3 pole - 690 V IEC or 600 UL contactor with 1 built-in auxiliary contact and screw terminals, controlling motors up to 4 kW / 400 V AC (AC-3) or 5 hp / 480 V UL and switching power circuits up to 25 A (AC-1) or 25 A UL general use. Thanks to the AF technology, the contactor has a wide control voltage range (100-250 V 50/60 Hz and DC), managing large control voltage variations, reducing panel energy consumptions and ensuring distinct operations in unstable networks. Furthermore, surge protection is built-in, offering a compact solution. AF contactors have a block type design, can be easily extended with add-on auxiliary contact blocks and an additional wide range of accessories.

### Ordering

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

### Popular Downloads

|                          |                 |
|--------------------------|-----------------|
| 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 $q = 40^\circ\text{C}$ 35 A<br>acc. to IEC 60947-5-1, $q = 40^\circ\text{C}$ 16 A                                                                                                                                                                                                                                                                                                                             |
| Rated Operational Current AC-1 ( $I_e$ )           | (690 V) $40^\circ\text{C}$ 25<br>(690 V) $60^\circ\text{C}$ 25 A<br>(690 V) $70^\circ\text{C}$ 22                                                                                                                                                                                                                                                                                                                                                    |
| Rated Operational Current AC-3 ( $I_e$ )           | (415 V) $60^\circ\text{C}$ 9 A<br>(440 V) $60^\circ\text{C}$ 9 A<br>(500 V) $60^\circ\text{C}$ 9.5 A<br>(690 V) $60^\circ\text{C}$ 7 A<br>(380 / 400 V) $60^\circ\text{C}$ 9 A<br>(220 / 230 / 240 V) $60^\circ\text{C}$ 9 A                                                                                                                                                                                                                         |
| Rated Operational Power AC-3 ( $P_e$ )             | (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<br>(380 / 400 V) 4 kW<br>(220 / 230 / 240 V) 2.2 kW                                                                                                                                                                                                                                                                                                                 |
| Rated Operational Current AC-15 ( $I_e$ )          | (500 V) 2 A<br>(690 V) 2 A<br>(24 / 127 V) 6 A<br>(220 / 240 V) 4 A<br>(400 / 440 V) 3 A                                                                                                                                                                                                                                                                                                                                                             |
| Rated Short-time Withstand Current ( $I_{cw}$ )    | at $40^\circ\text{C}$ Ambient Temp, in Free Air, from a Cold State 10 s 150 A<br>at $40^\circ\text{C}$ Ambient Temp, in Free Air, from a Cold State 15 min 35 A<br>at $40^\circ\text{C}$ Ambient Temp, in Free Air, from a Cold State 1 min 60 A<br>at $40^\circ\text{C}$ Ambient Temp, in Free Air, from a Cold State 1 s 300 A<br>at $40^\circ\text{C}$ 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 ( $I_e$ )          | (24 V) 6 A / 144 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>(125 V) 0.55 A / 69 W<br>(220 V) 0.27 A / 60 W<br>(250 V) 0.27 A / 68 W                                                                                                                                                                                                                                                                                  |

|                                                     |                                                                                                                                                                                                                                                                        |
|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                     | (400 V) 0.15 A / 60 W<br>(500 V) 0.13 A / 65 W<br>(600 V) 0.1 A / 60 W                                                                                                                                                                                                 |
| Rated Insulation Voltage (U <sub>i</sub> )          | acc. to IEC 60947-4-1 and VDE 0110 (Gr. C) 690 V<br>acc. to UL/CSA 600 V                                                                                                                                                                                               |
| Rated Impulse Withstand Voltage (U <sub>imp</sub> ) | 6 kV                                                                                                                                                                                                                                                                   |
| Maximum Mechanical Switching Frequency              | 3600 cycles per hour                                                                                                                                                                                                                                                   |
| Rated Control Circuit Voltage (U <sub>c</sub> )     | 50 Hz 100 ... 250 V<br>50 Hz / 60 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 Ferrule 1/2x 0.75 ... 6 mm <sup>2</sup><br>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><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 2x 0.75 ... 1.5 mm <sup>2</sup><br>Flexible with Insulated Ferrule 1x 0.75 ... 2.5 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 IP40<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                                                                                                                                                                                                                                                        |

## 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>(200 ... 208 V AC) Three Phase 2 hp<br>(220 ... 240 V AC) Three Phase 2 hp<br>(240 V AC) Single Phase 1-1/2 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 lA<br>Control Circuit 11 lA<br>Main Circuit 13 lA                                                                                                                                                             |

## Environmental

|                                                |                                                                                                                                                                                 |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ambient Air Temperature                        | Close to Contactor Fitted with Thermal O/L Relay -25 ... +60 °C<br>Close to Contactor without Thermal O/L Relay -40 ... +70 °C<br>Close to Contactor for Storage -60 ... +80 °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 K40<br>Open, Shock Direction: B1 5 K40<br>Shock Direction: A 30 K40<br>Shock Direction: B2 15 K40                                                |

Shock Direction: C1 25 K40

Shock Direction: C2 25 K40

RoHS Status

Following EU Directive 2011/65/EU

## Certificates and Declarations (Document Number)

|                                    |                                            |
|------------------------------------|--------------------------------------------|
| ABS Certificate                    | ABS_15-GE1349500-PDA_90682247              |
| BV Certificate                     | BV_2634H24898B0                            |
| CB Certificate                     | CB_SE-96551                                |
| CCC Certificate                    | CCC_2010010304445624                       |
| CQC Certificate                    | CQC2010010304445624<br>CQC2020010304298240 |
| cUL Certificate                    | UL_20180227_E312527_7_1                    |
| Declaration of<br>Conformity - CCC | 2020980304001253<br>2020980304001082       |
| Declaration of<br>Conformity - CE  | 1SBD250000U1000                            |
| DNV Certificate                    | DNV-GL_TAE00001AF-3                        |
| DNV GL Certificate                 | DNV-GL_TAE00001AF-3                        |
| EAC Certificate                    | EAC_RU_FRME77B03447                        |
| Environmental<br>Information       | 1SBD250147E1000                            |
| GL Certificate                     | DNV-GL_TAE00001AF-3                        |
| GOST Certificate                   | GOST_POCCFR.ME77.B07175.pdf                |
| Instructions and<br>Manuals        | 1SBC101027M6801                            |
| KC Certificate                     | KC_HW02016-15004C                          |
| LR Certificate                     | LRS_1300087E1                              |
| RINA Certificate                   | RINA_ELE240318XG                           |
| RMRS Certificate                   | RMRS_1802705280                            |
| RoHS Information                   | 1SBD250000U1000                            |
| UL Certificate                     | UL_20140305-E312527_7_1                    |
| UL Listing Card                    | E312527                                    |

## Container Information

|                                   |               |
|-----------------------------------|---------------|
| Package Level 1 Units             | box 1 piece   |
| Package Level 1 Width             | 87 mm         |
| Package Level 1 Depth /<br>Length | 79 mm         |
| Package Level 1 Height            | 47 mm         |
| Package Level 1 Gross<br>Weight   | 0.27 kg       |
| Package Level 1 EAN               | 3471523110038 |
| Package Level 2 Units             | box 27 piece  |
| Package Level 2 Width             | 250 mm        |
| Package Level 2 Depth /<br>Length | 300 mm        |
| Package Level 2 Height            | 315 mm        |
| Package Level 2 Gross<br>Weight   | 7.29 kg       |
| Package Level 3 Units             | 1296 piece    |

## Classifications

|                               |                                           |
|-------------------------------|-------------------------------------------|
| Object Classification<br>Code | Q                                         |
| 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  |
| eClass             | V11.0 : 27371003                          |
| UNSPSC             | 39121529                                  |
| E-Number (Finland) | 3706201                                   |
| E-Number (Sweden)  | 3210009                                   |

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## Categories

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

