



PRODUCT-DETAILS

AF09-30-01-11

AF09-30-01-11 24-60V50/60HZ 20-60VDC

Contactors



| General Information | |
|-----------------------|---|
| Extended Product Type | AF09-30-01-11 |
| Product ID | 1SBL137001R1101 |
| EAN | 3471523110113 |
| Catalog Description | AF09-30-01-11 24-60V50/60HZ 20-60VDC Contactors |
| Long Description | The AF09-30-01-11 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 (24-60 V 50/60 Hz and 20-60 V 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 | |
|-----------------------------------|-----------------|
| Data Sheet, Technical Information | 1SBC100220C0201 |
| Instructions and Manuals | 1SBC101027M6801 |
| CAD Dimensional Drawing | 2CDC001079B0201 |

| 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 | 0 |
| Number of Auxiliary Contacts NC | 1 |
| Standards | IEC/EN 60947-1, IEC/EN 60947-4-1, UL 60947-4-1, CSA C22.2 No. 60947-4-1 |
| Rated Operational Voltage | Auxiliary Circuit 690 V Main Circuit 690 V |
| Rated Frequency (f) | Auxiliary Circuit 50 / 60 Hz Control Circuit 50 / 60 Hz Main Circuit 50 / 60 Hz |
| Conventional Free-air Thermal Current (I _{th}) | acc. to IEC 60947-4-1, Open Contactors $\Theta = 40\text{ }^{\circ}\text{C}$ 35 A acc. to IEC 60947-5-1, $\Theta = 40\text{ }^{\circ}\text{C}$ 16 A |
| Rated Operational Current AC-1 (I _e) | (690 V) 40 °C 25 A (690 V) 60 °C 25 A (690 V) 70 °C 22 A |
| Rated Operational Current AC-3 (I _e) | (415 V) 60 °C 9 A (440 V) 60 °C 9 A (500 V) 60 °C 9.5 A (690 V) 60 °C 7 A (380 / 400 V) 60 °C 9 A (220 / 230 / 240 V) 60 °C 9 A |
| Rated Operational Current AC-3e (I _e) | (415 V) 60 °C 9 A (440 V) 60 °C 9 A (500 V) 60 °C 9.5 A (690 V) 60 °C 7 A (380 / 400 V) 60 °C 9 A (220 / 230 / 240 V) 60 °C 9 A |
| Rated Operational Power AC-3 (P _e) | (400 V) 4 kW (415 V) 4 kW (440 V) 4 kW (500 V) 5.5 kW (690 V) 5.5 kW (380 / 400 V) 4 kW (220 / 230 / 240 V) 2.2 kW |
| Rated Operational Power AC-3e (P _e) | (415 V) 4 kW (440 V) 4 kW (500 V) 5.5 kW (690 V) 5.5 kW (380 / 400 V) 4 kW |

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|---|---|
| | (220 / 230 / 240 V) 2.2 kW |
| Rated Operational Current AC-15 (I_e) | (500 V) 2 A (690 V) 2 A (24 / 127 V) 6 A (220 / 240 V) 4 A (400 / 440 V) 3 A |
| Rated Short-time Withstand Current Low Voltage (I_{cw}) | at 40 °C Ambient Temp, in Free Air, from a Cold State 10 s 150 A at 40 °C Ambient Temp, in Free Air, from a Cold State 15 min 35 A at 40 °C Ambient Temp, in Free Air, from a Cold State 1 min 60 A at 40 °C Ambient Temp, in Free Air, from a Cold State 1 s 300 A at 40 °C Ambient Temp, in Free Air, from a Cold State 30 s 80 A for 0.1 s 140 A 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 $\cos \phi=0.45$ ($\cos \phi=0.35$ for $I_e > 100$ A) at 690 V 106 A |
| Maximum Electrical Switching Frequency | (AC-1) 600 cycles per hour (AC-15) 1200 cycles per hour (AC-2 / AC-4) 300 cycles per hour (AC-3) 1200 cycles per hour (DC-13) 900 cycles per hour |
| Rated Operational Current DC-1 (I_e) | (110 V) 1-Pole, 40 °C 10 A (110 V) 1-Pole, 60 °C 10 A (110 V) 1-Pole, 70 °C 10 A (110 V) 2 Poles in Series, 40 °C 25 A (110 V) 2 Poles in Series, 60 °C 25 A (110 V) 2 Poles in Series, 70 °C 22 A (110 V) 3 Poles in Series, 40 °C 25 A (110 V) 3 Poles in Series, 60 °C 25 A (110 V) 3 Poles in Series, 70 °C 22 A (220 V) 2 Poles in Series, 40 °C 10 A (220 V) 2 Poles in Series, 60 °C 10 A (220 V) 2 Poles in Series, 70 °C 10 A (220 V) 3 Poles in Series, 40 °C 25 A (220 V) 3 Poles in Series, 60 °C 25 A (220 V) 3 Poles in Series, 70 °C 22 A (72 V) 1-Pole, 40 °C 25 A (72 V) 1-Pole, 60 °C 25 A (72 V) 1-Pole, 70 °C 22 A (72 V) 2 Poles in Series, 40 °C 25 A (72 V) 2 Poles in Series, 60 °C 25 A (72 V) 2 Poles in Series, 70 °C 22 A (72 V) 3 Poles in Series, 40 °C 25 A (72 V) 3 Poles in Series, 60 °C 25 A (72 V) 3 Poles in Series, 70 °C 22 A |
| Rated Operational Current DC-3 (I_e) | (110 V) 1-Pole, 40 °C 6 A (110 V) 1-Pole, 60 °C 6 A (110 V) 1-Pole, 70 °C 6 A (110 V) 2 Poles in Series, 40 °C 25 A (110 V) 2 Poles in Series, 60 °C 25 A (110 V) 2 Poles in Series, 70 °C 22 A (110 V) 3 Poles in Series, 40 °C 25 A (110 V) 3 Poles in Series, 60 °C 25 A (110 V) 3 Poles in Series, 70 °C 22 A (220 V) 2 Poles in Series, 40 °C 6 A (220 V) 2 Poles in Series, 60 °C 6 A (220 V) 2 Poles in Series, 70 °C 6 A (220 V) 3 Poles in Series, 40 °C 25 A (220 V) 3 Poles in Series, 60 °C 25 A (220 V) 3 Poles in Series, 70 °C 22 A (72 V) 1-Pole, 40 °C 25 A (72 V) 1-Pole, 60 °C 25 A (72 V) 1-Pole, 70 °C 22 A (72 V) 2 Poles in Series, 40 °C 25 A (72 V) 2 Poles in Series, 60 °C 25 A (72 V) 2 Poles in Series, 70 °C 22 A (72 V) 3 Poles in Series, 40 °C 25 A (72 V) 3 Poles in Series, 60 °C 25 A (72 V) 3 Poles in Series, 70 °C 22 A |
| Rated Operational | (110 V) 1-Pole, 40 °C 4 A |

Current DC-5 (I_e)

(110 V) 1-Pole, 60 °C 4 A
 (110 V) 1-Pole, 70 °C 4 A
 (110 V) 2 Poles in Series, 40 °C 10 A
 (110 V) 2 Poles in Series, 60 °C 10 A
 (110 V) 2 Poles in Series, 70 °C 10 A
 (110 V) 3 Poles in Series, 40 °C 25 A
 (110 V) 3 Poles in Series, 60 °C 25 A
 (110 V) 3 Poles in Series, 70 °C 22 A
 (220 V) 2 Poles in Series, 40 °C 4 A
 (220 V) 2 Poles in Series, 60 °C 4 A
 (220 V) 2 Poles in Series, 70 °C 4 A
 (220 V) 3 Poles in Series, 40 °C 9 A
 (220 V) 3 Poles in Series, 60 °C 9 A
 (220 V) 3 Poles in Series, 70 °C 9 A
 (72 V) 1-Pole, 40 °C 9 A
 (72 V) 1-Pole, 60 °C 9 A
 (72 V) 1-Pole, 70 °C 9 A
 (72 V) 2 Poles in Series, 40 °C 25 A
 (72 V) 2 Poles in Series, 60 °C 25 A
 (72 V) 2 Poles in Series, 70 °C 22 A
 (72 V) 3 Poles in Series, 40 °C 25 A
 (72 V) 3 Poles in Series, 60 °C 25 A
 (72 V) 3 Poles in Series, 70 °C 22 A

Rated Operational
Current DC-13 (I_e)

(24 V) 6 A / 144 W
 (48 V) 2.8 A / 134 W
 (72 V) 1 A / 72 W
 (110 V) 0.55 A / 60 W
 (125 V) 0.55 A / 69 W
 (220 V) 0.27 A / 60 W
 (250 V) 0.27 A / 68 W
 (400 V) 0.15 A / 60 W
 (500 V) 0.13 A / 65 W
 (600 V) 0.1 A / 60 W

Rated Insulation Voltage
(U_i)

acc. to IEC 60947-4-1 690 V
 acc. to IEC 60947-5-1 690 V
 acc. to UL/CSA 600 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 24 ... 60 V
 60 Hz 24 ... 60 V
 DC Operation 20 ... 60 V

Operate Time

Between Coil De-energization and NC Contact Closing 13 ... 98 ms
 Between Coil De-energization and NO Contact Opening 11 ... 95 ms
 Between Coil Energization and NC Contact Opening 38 ... 90 ms
 Between Coil Energization and NO Contact Closing 40 ... 95 ms

Mounting on DIN Rail

TH35-15 (35 x 15 mm Mounting Rail) acc. to IEC 60715
 TH35-7.5 (35 x 7.5 mm Mounting Rail) acc. to IEC 60715

Mounting by Screws (not
supplied)

2 x M4 screws placed diagonally

Connecting Capacity
Main Circuit

Flexible with Ferrule 1/2x 0.75 ... 6 mm²
 Flexible with Insulated Ferrule 1x 0.75 ... 4 mm²
 Flexible with Insulated Ferrule 2x 0.75 ... 2.5 mm²
 Rigid Solid 1/2x 1 ... 4 mm²
 Rigid Stranded 1/2x 1 ... 6 mm²

Connecting Capacity
Auxiliary Circuit

Flexible with Ferrule 1/2x 0.75 ... 2.5 mm²
 Flexible with Insulated Ferrule 2x 0.75 ... 1.5 mm²
 Flexible with Insulated Ferrule 1x 0.75 ... 2.5 mm²
 Rigid Solid 1/2x 1 ... 2.5 mm²
 Rigid Stranded 1/2x 1 ... 2.5 mm²

Connecting Capacity
Control Circuit

Flexible with Ferrule 1/2x 0.75 ... 2.5 mm²
 Flexible with Insulated Ferrule 1x 0.75 ... 2.5 mm²
 Flexible with Insulated Ferrule 2x 0.75 ... 1.5 mm²
 Rigid Solid 1/2x 1 ... 2.5 mm²
 Rigid Stranded 1/2x 1 ... 2.5 mm²

Wire Stripping Length

Auxiliary Circuit 10 mm

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|----------------------|---|
| | Control Circuit 10 mm Main Circuit 10 mm |
| Degree of Protection | acc. to IEC 60529, IEC 60947-1, EN 60529 Auxiliary Terminals IP20 acc. to IEC 60529, IEC 60947-1, EN 60529 Coil Terminals IP20 acc. to IEC 60529, IEC 60947-1, EN 60529 Main Terminals IP20 |
| Terminal Type | Screw Terminals |

Technical UL/CSA

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|---|--|
| NEMA Size | 00 |
| Continuous Current Rating NEMA | 9 A |
| Horsepower Rating NEMA | (115 V AC) Single Phase 1/3 Hp (200 V AC) Three Phase 1-1/2 Hp (230 V AC) Single Phase 1 Hp (230 V AC) Three Phase 1-1/2 Hp (460 V AC) Three Phase 2 Hp (575 V AC) Three Phase 2 Hp |
| Maximum Operating Voltage UL/CSA | Main Circuit 600 V |
| General Use Rating UL/CSA | (600 V AC) 25 A |
| Horsepower Rating UL/CSA | (120 V AC) Single Phase 3/4 hp (200 ... 208 V AC) Three Phase 2 hp (220 ... 240 V AC) Three Phase 2 hp (240 V AC) Single Phase 1-1/2 hp (440 ... 480 V AC) Three Phase 5 hp (550 ... 600 V AC) Three Phase 7-1/2 hp |
| Connecting Capacity Main Circuit UL/CSA | Rigid Solid 1/2x 16-10 AWG Rigid Stranded 1/2x 16-10 AWG |
| Connecting Capacity Auxiliary Circuit UL/CSA | Rigid Solid 1/2x 18-14 AWG Rigid Stranded 1/2x 18-14 AWG |
| Connecting Capacity Control Circuit UL/CSA | Rigid Solid 1/2x 18-14 AWG Rigid Stranded 1/2x 18-14 AWG |
| Tightening Torque UL/CSA | Auxiliary Circuit 11 in-lb Control Circuit 11 in-lb Main Circuit 13 in-lb |

Environmental

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| Ambient Air Temperature | Close to Contactor Fitted with Thermal O/L Relay -25 ... 60 °C Close to Contactor without Thermal O/L Relay -40 ... 70 °C Close to Contactor for Storage -60 ... +80 °C |
| Climatic Withstand | Category B according to IEC 60947-1 Annex Q |
| Maximum Operating Altitude Permissible | Without Derating 3000 m |
| Resistance to Shock acc. to IEC 60068-2-27 | Closed, Shock Direction: B1 25 g Open, Shock Direction: B1 5 g Shock Direction: A 30 g Shock Direction: B2 15 g Shock Direction: C1 25 g Shock Direction: C2 25 g |
| Resistance to Vibrations | 4g Closed Position & 2g Open position 5 ... 300 Hz |

Material Compliance

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| Conflict Minerals Reporting Template (CMRT) | 9AKK108467A5658 |
| REACH Declaration | 2CMT2021-006202 |

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|-------------------------------------|--|
| RoHS Information | 2CMT2021-006277 |
| RoHS Status | Following EU Directive 2011/65/EU and Amendment 2015/863 July 22, 2019 |
| Toxic Substances Control Act - TSCA | 2CMT2023-006525 |
| WEEE B2C / B2B | Business To Business |
| WEEE Category | 5. Small Equipment (No External Dimension More Than 50 cm) |

ABB EcoSolutions

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|---|------------------------------------|
| Environmental Product Declaration - EPD | 1SBD250584E3000 2TFP200035A1001 |
| End of Life Instructions | 1SBC101080M6801 |

Certificates and Declarations

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|----------------------------------|--|
| ABS Certificate | ABS_20-2060694-PDA |
| BV Certificate | BV_2634H24898C0 |
| CB Certificate | CB_SE-113345 |
| CCC Certificate | CCC_2010010304445624 |
| CQC Certificate | CQC2010010304445624 CQC2020010304298240 |
| Declaration of Conformity - CCC | 2020980304001253 2020980304001082 |
| Declaration of Conformity - CE | 1SBD250000U1000 |
| Declaration of Conformity - UKCA | 1SBD250031U1000 |
| DNV Certificate | DNV_TAE00001AF-4 |
| GOST Certificate | GOST_POCCFR.ME77.B07175.pdf |
| KC Certificate | KC_HW02016-15004C |
| LR Certificate | LRS_LR23403517TA-02 |
| RINA Certificate | RINA_ELE142224XG |
| RMRS Certificate | RMRS_1802705280 |
| UL Certificate | UL-US-2150887-5 UL-CA-2142658-5 |
| UL Listing Card | E312527 |

Container Information

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|--------------------------------|---------------|
| Package Level 1 Units | box 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 | 3471523110113 |
| Package Level 2 Units | box 27 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 | 7.29 kg |
| Package Level 3 Units | 1296 piece |

| Classifications | | |
|------------------------------------|--|---|
| Object Classification Code | | Q |
| ETIM 7 | EC000066 - Power contactor, AC switching | |
| ETIM 8 | EC000066 - Power contactor, AC switching | |
| ETIM 9 | EC000066 - Power contactor, AC switching | |
| eClass | V11.0 : 27371003 | |
| UNSPSC | 39121529 | |
| IDEA Granular Category Code (IGCC) | 4758 >> lec Contactors | |
| E-Number (Finland) | 3705801 | |
| E-Number (Sweden) | 3210015 | |

Categories

Low Voltage Products and Systems → Control Products → Contactors → Block Contactors → AF Contactors → AF09

