

## PRODUCT-DETAILS

# AF09-30-10K-11

## AF09-30-10K-11 24-60V50/60HZ 20-60VDC

### Contactors



## General Information

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extended Product Type | AF09-30-10K-11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Product ID            | 1SBL137005R1110                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| EAN                   | 3471523154018                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Catalog Description   | AF09-30-10K-11 24-60V50/60HZ 20-60VDC Contactor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Long Description      | <p>The AF09-30-10K-11 is a 3 pole - 690 V IEC or 600 UL contactor with 1 built-in auxiliary contact and push-in spring 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.</p> |

## Ordering

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

## Popular Downloads

|                          |                 |
|--------------------------|-----------------|
| Instructions and Manuals | 1SBC101054M6801 |
| CAD Dimensional Drawing  | 2CDC001079B0201 |

## Dimensions

|                            |          |
|----------------------------|----------|
| Product Net Width          | 45 mm    |
| Product Net Depth / Length | 77 mm    |
| Product Net Height         | 92.3 mm  |
| Product Net Weight         | 0.285 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/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<br>Main Circuit 690 V                                                                                                  |
| Rated Frequency (f)                                | Auxiliary Circuit 50 / 60 Hz<br>Control 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 $\Theta = 40^\circ\text{C}$ 35 A<br>acc. to IEC 60947-5-1, $\Theta = 40^\circ\text{C}$ 16 A             |
| Rated Operational Current AC-1 ( $I_e$ )           | (690 V) 40 °C 25 A<br>(690 V) 60 °C 25 A<br>(690 V) 70 °C 22 A                                                                                 |
| Rated Operational Current AC-3 ( $I_e$ )           | (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<br>(380 / 400 V) 60 °C 9 A<br>(220 / 230 / 240 V) 60 °C 9 A |
| Rated Operational Current AC-3e ( $I_e$ )          | (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<br>(380 / 400 V) 60 °C 9 A<br>(220 / 230 / 240 V) 60 °C 9 A |
| Rated Operational Power AC-3 ( $P_e$ )             | (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 Power                            | (415 V) 4 kW                                                                                                                                   |

|                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AC-3e (P <sub>e</sub> )                                                 | (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<br>AC-15 (I <sub>e</sub> )                    | (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<br>Withstand Current Low<br>Voltage (I <sub>cw</sub> ) | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Maximum Breaking<br>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 Electrical<br>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<br>DC-1 (I <sub>e</sub> )                     | (110 V) 1-Pole, 40 °C 10 A<br>(110 V) 1-Pole, 60 °C 10 A<br>(110 V) 1-Pole, 70 °C 10 A<br>(110 V) 2 Poles in Series, 40 °C 25 A<br>(110 V) 2 Poles in Series, 60 °C 25 A<br>(110 V) 2 Poles in Series, 70 °C 22 A<br>(110 V) 3 Poles in Series, 40 °C 25 A<br>(110 V) 3 Poles in Series, 60 °C 25 A<br>(110 V) 3 Poles in Series, 70 °C 22 A<br>(220 V) 2 Poles in Series, 40 °C 10 A<br>(220 V) 2 Poles in Series, 60 °C 10 A<br>(220 V) 2 Poles in Series, 70 °C 10 A<br>(220 V) 3 Poles in Series, 40 °C 25 A<br>(220 V) 3 Poles in Series, 60 °C 25 A<br>(220 V) 3 Poles in Series, 70 °C 22 A<br>(72 V) 1-Pole, 40 °C 25 A<br>(72 V) 1-Pole, 60 °C 25 A<br>(72 V) 1-Pole, 70 °C 22 A<br>(72 V) 2 Poles in Series, 40 °C 25 A<br>(72 V) 2 Poles in Series, 60 °C 25 A<br>(72 V) 2 Poles in Series, 70 °C 22 A<br>(72 V) 3 Poles in Series, 40 °C 25 A<br>(72 V) 3 Poles in Series, 60 °C 25 A<br>(72 V) 3 Poles in Series, 70 °C 22 A |
| Rated Operational Current<br>DC-3 (I <sub>e</sub> )                     | (110 V) 1-Pole, 40 °C 6 A<br>(110 V) 1-Pole, 60 °C 6 A<br>(110 V) 1-Pole, 70 °C 6 A<br>(110 V) 2 Poles in Series, 40 °C 25 A<br>(110 V) 2 Poles in Series, 60 °C 25 A<br>(110 V) 2 Poles in Series, 70 °C 22 A<br>(110 V) 3 Poles in Series, 40 °C 25 A<br>(110 V) 3 Poles in Series, 60 °C 25 A<br>(110 V) 3 Poles in Series, 70 °C 22 A<br>(220 V) 2 Poles in Series, 40 °C 6 A<br>(220 V) 2 Poles in Series, 60 °C 6 A<br>(220 V) 2 Poles in Series, 70 °C 6 A<br>(220 V) 3 Poles in Series, 40 °C 25 A<br>(220 V) 3 Poles in Series, 60 °C 25 A<br>(220 V) 3 Poles in Series, 70 °C 22 A<br>(72 V) 1-Pole, 40 °C 25 A<br>(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<br>DC-5 ( $I_e$ )      | (110 V) 1-Pole, 40 °C 4 A                                        |
|                                                  | (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<br>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<br>( $U_i$ )            | 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<br>Voltage ( $U_{imp}$ ) | 6 kV                                                             |
| Maximum Mechanical<br>Switching Frequency        | 3600 cycles per hour                                             |
| Rated Control Circuit<br>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<br>supplied)             | 2 x M4 screws placed diagonally                                  |
| Connecting Capacity Main<br>Circuit              | Flexible with Ferrule 1/2x 0.5 ... 4 mm <sup>2</sup>             |
|                                                  | Flexible with Insulated Ferrule 1x 0.5 ... 4 mm <sup>2</sup>     |
|                                                  | Flexible with Insulated Ferrule 2x 0.5 ... 2.5 mm <sup>2</sup>   |
|                                                  | Flexible 1/2x 0.5 ... 4 mm <sup>2</sup>                          |

|                                          |                                                                                                                                                                                                                       |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                          | Rigid Solid 1/2x 1 ... 2.5 mm <sup>2</sup><br>Rigid Stranded 1/2x 4 ... 6 mm <sup>2</sup>                                                                                                                             |
| Connecting Capacity<br>Auxiliary Circuit | Flexible with Ferrule 1/2x 0.5 ... 2.5 mm <sup>2</sup><br>Flexible with Insulated Ferrule 1/2x 0.5 ... 1.5 mm <sup>2</sup><br>Flexible 1/2x 0.5 ... 2.5 mm <sup>2</sup><br>Rigid Solid 1/2x 1 ... 2.5 mm <sup>2</sup> |
| Connecting Capacity<br>Control Circuit   | Flexible with Ferrule 1/2x 0.5 ... 2.5 mm <sup>2</sup><br>Flexible with Insulated Ferrule 1/2x 0.5 ... 1.5 mm <sup>2</sup><br>Flexible 1/2x 0.5 ... 2.5 mm <sup>2</sup><br>Rigid Solid 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                            | Push-in Spring Terminals                                                                                                                                                                                              |

## Technical UL/CSA

|                                                 |                                                                                                                                                                                                                                    |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NEMA Size                                       | 00                                                                                                                                                                                                                                 |
| Continuous Current<br>Rating NEMA               | 9 A                                                                                                                                                                                                                                |
| Horsepower Rating NEMA                          | (115 V AC) Single Phase 1/3 Hp<br>(200 V AC) Three Phase 1-1/2 Hp<br>(230 V AC) Single Phase 1 Hp<br>(230 V AC) Three Phase 1-1/2 Hp<br>(460 V AC) Three Phase 2 Hp<br>(575 V AC) Three Phase 2 Hp                                 |
| Maximum Operating<br>Voltage UL/CSA             | Main Circuit 600 V                                                                                                                                                                                                                 |
| General Use Rating<br>UL/CSA                    | (600 V AC) 25 A                                                                                                                                                                                                                    |
| Horsepower Rating<br>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 |
| Connecting Capacity Main<br>Circuit UL/CSA      | Rigid Solid 1/2x 18-14 AWG<br>Rigid Stranded 1/2x 18-10 AWG                                                                                                                                                                        |
| Connecting Capacity<br>Auxiliary Circuit UL/CSA | Rigid Solid 1/2x 18-14 AWG                                                                                                                                                                                                         |
| Connecting Capacity<br>Control Circuit UL/CSA   | Rigid Solid 1/2x 18-14 AWG                                                                                                                                                                                                         |

## Environmental

|                                           |                                                                                                             |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Ambient Air Temperature                   | 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<br>Altitude Permissible | Without Derating 3000 m                                                                                     |
| REACH Declaration                         | 2CMT2021-006202                                                                                             |
| Resistance to Vibrations                  | 5 ... 300 Hz 4 g closed position / 2 g open position                                                        |

acc. to IEC 60068-2-6

RoHS Information

2CMT2021-006277

RoHS Status

Following EU Directive 2011/65/EU

## Certificates and Declarations

|                                     |                                            |
|-------------------------------------|--------------------------------------------|
| ABS Certificate                     | ABS_20-2060694-PDA                         |
| CB Certificate                      | CB_SE-108879                               |
| CCC Certificate                     | CCC_2010010304445624                       |
| CQC Certificate                     | CQC2010010304445624<br>CQC2020010304298240 |
| Declaration of Conformity<br>- CCC  | 2020980304001253<br>2020980304001082       |
| Declaration of Conformity<br>- CE   | 1SBD250000U1000                            |
| Declaration of Conformity<br>- UKCA | 1SBD250031U1000                            |
| DNV Certificate                     | DNV_TAE00001AF-4                           |
| LR Certificate                      | LRS_LR2002723TA-02                         |
| RINA Certificate                    | RINA_ELE240318XG                           |
| RMRS Certificate                    | RMRS_1802705280                            |
| UL Certificate                      | UL-US-2150887-5<br>UL-CA-2142658-5         |

## Container Information

|                                   |               |
|-----------------------------------|---------------|
| Package Level 1 Units             | box 1 piece   |
| Package Level 1 Width             | 93 mm         |
| Package Level 1 Depth /<br>Length | 86 mm         |
| Package Level 1 Height            | 45 mm         |
| Package Level 1 Gross<br>Weight   | 0.3 kg        |
| Package Level 1 EAN               | 3471523154018 |
| Package Level 2 Units             | box 21 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   | 13.5 kg       |
| Package Level 3 Units             | 1080 piece    |

## Classifications

|                            |                                           |
|----------------------------|-------------------------------------------|
| Object Classification 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  |
| ETIM 8                             | EC000066 - Power contactor, AC switching  |
| eClass                             | V11.0 : 27371003                          |
| UNSPSC                             | 39121529                                  |
| IDEA Granular Category Code (IGCC) | 4758 >> Iec Contactors                    |
| E-Number (Finland)                 | 3707849                                   |
| E-Number (Sweden)                  | 3210579                                   |

