



PRODUCT-DETAILS

# AF16-30-01K-11

## AF16-30-01K-11 24-60V50/60HZ 20-60VDC

### Contacteur



| General Information   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extended Product Type | AF16-30-01K-11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Product ID            | 1SBL177005R1101                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| EAN                   | 3471523154711                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Catalog Description   | AF16-30-01K-11 24-60V50/60HZ 20-60VDC Contacteur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Long Description      | The AF16-30-01K-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 7.5 kW / 400 V AC (AC-3) or 10 hp / 480 V UL and switching power circuits up to 30 A (AC-1) or 30 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 |

| Popular Downloads                 |                 |
|-----------------------------------|-----------------|
| Data Sheet, Technical Information | 1SBC100214C0202 |
| 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                          | 0                                                                                                                                                                        |
| Number of Auxiliary Contacts NC                          | 1                                                                                                                                                                        |
| Number of Poles                                          | 3P                                                                                                                                                                       |
| 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 <sub>th</sub> ) | acc. to IEC 60947-4-1, Open Contactors $\Theta = 40\text{ °C}$ 35 A<br>acc. to IEC 60947-5-1, $\Theta = 40\text{ °C}$ 16 A                                               |
| Rated Operational Current AC-1 (I <sub>e</sub> )         | (690 V) 40 °C 30 A<br>(690 V) 60 °C 30 A<br>(690 V) 70 °C 26 A                                                                                                           |
| Rated Operational Current AC-3 (I <sub>e</sub> )         | (415 V) 60 °C 18 A<br>(440 V) 60 °C 18 A<br>(500 V) 60 °C 15 A<br>(690 V) 60 °C 10.5 A<br>(380 / 400 V) 60 °C 18 A<br>(220 / 230 / 240 V) 60 °C 18 A                     |
| Rated Operational Current AC-3e (I <sub>e</sub> )        | (415 V) 60 °C 18 A<br>(440 V) 60 °C 18 A<br>(500 V) 60 °C 15 A<br>(690 V) 60 °C 10.5 A<br>(380 / 400 V) 60 °C 18 A<br>(220 / 230 / 240 V) 60 °C 18 A                     |
| Rated Operational Current 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 Operational Current DC-1 (I <sub>e</sub> )         | (110 V) 1-Pole, 40 °C 20 A<br>(110 V) 1-Pole, 60 °C 20 A<br>(110 V) 1-Pole, 70 °C 20 A<br>(110 V) 2 Poles in Series, 40 °C 30 A<br>(110 V) 2 Poles in Series, 60 °C 30 A |

|                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                      | (110 V) 2 Poles in Series, 70 °C 26 A<br>(110 V) 3 Poles in Series, 40 °C 30 A<br>(110 V) 3 Poles in Series, 60 °C 30 A<br>(110 V) 3 Poles in Series, 70 °C 26 A<br>(220 V) 2 Poles in Series, 40 °C 20 A<br>(220 V) 2 Poles in Series, 60 °C 20 A<br>(220 V) 2 Poles in Series, 70 °C 20 A<br>(220 V) 3 Poles in Series, 40 °C 30 A<br>(220 V) 3 Poles in Series, 60 °C 30 A<br>(220 V) 3 Poles in Series, 70 °C 26 A<br>(72 V) 1-Pole, 40 °C 30 A<br>(72 V) 1-Pole, 60 °C 30 A<br>(72 V) 1-Pole, 70 °C 26 A<br>(72 V) 2 Poles in Series, 40 °C 30 A<br>(72 V) 2 Poles in Series, 60 °C 30 A<br>(72 V) 2 Poles in Series, 70 °C 26 A<br>(72 V) 3 Poles in Series, 40 °C 30 A<br>(72 V) 3 Poles in Series, 60 °C 30 A<br>(72 V) 3 Poles in Series, 70 °C 26 A                                                                                                                                                                       |
| Rated Operational<br>Current DC-3 (I <sub>e</sub> )  | (110 V) 1-Pole, 40 °C 8 A<br>(110 V) 1-Pole, 60 °C 8 A<br>(110 V) 1-Pole, 70 °C 8 A<br>(110 V) 2 Poles in Series, 40 °C 30 A<br>(110 V) 2 Poles in Series, 60 °C 30 A<br>(110 V) 2 Poles in Series, 70 °C 26 A<br>(110 V) 3 Poles in Series, 40 °C 30 A<br>(110 V) 3 Poles in Series, 60 °C 30 A<br>(110 V) 3 Poles in Series, 70 °C 26 A<br>(220 V) 2 Poles in Series, 40 °C 8 A<br>(220 V) 2 Poles in Series, 60 °C 8 A<br>(220 V) 2 Poles in Series, 70 °C 8 A<br>(220 V) 3 Poles in Series, 40 °C 30 A<br>(220 V) 3 Poles in Series, 60 °C 30 A<br>(220 V) 3 Poles in Series, 70 °C 26 A<br>(72 V) 1-Pole, 40 °C 30 A<br>(72 V) 1-Pole, 60 °C 30 A<br>(72 V) 1-Pole, 70 °C 26 A<br>(72 V) 2 Poles in Series, 40 °C 30 A<br>(72 V) 2 Poles in Series, 60 °C 30 A<br>(72 V) 2 Poles in Series, 70 °C 26 A<br>(72 V) 3 Poles in Series, 40 °C 30 A<br>(72 V) 3 Poles in Series, 60 °C 30 A<br>(72 V) 3 Poles in Series, 70 °C 26 A |
| Rated Operational<br>Current DC-5 (I <sub>e</sub> )  | (110 V) 1-Pole, 40 °C 4 A<br>(110 V) 1-Pole, 60 °C 4 A<br>(110 V) 1-Pole, 70 °C 4 A<br>(110 V) 2 Poles in Series, 40 °C 20 A<br>(110 V) 2 Poles in Series, 60 °C 20 A<br>(110 V) 2 Poles in Series, 70 °C 20 A<br>(110 V) 3 Poles in Series, 40 °C 30 A<br>(110 V) 3 Poles in Series, 60 °C 30 A<br>(110 V) 3 Poles in Series, 70 °C 26 A<br>(220 V) 2 Poles in Series, 40 °C 4 A<br>(220 V) 2 Poles in Series, 60 °C 4 A<br>(220 V) 2 Poles in Series, 70 °C 4 A<br>(220 V) 3 Poles in Series, 40 °C 16 A<br>(220 V) 3 Poles in Series, 60 °C 16 A<br>(220 V) 3 Poles in Series, 70 °C 16 A<br>(72 V) 1-Pole, 40 °C 16 A<br>(72 V) 1-Pole, 60 °C 16 A<br>(72 V) 1-Pole, 70 °C 16 A<br>(72 V) 2 Poles in Series, 40 °C 30 A<br>(72 V) 2 Poles in Series, 60 °C 30 A<br>(72 V) 2 Poles in Series, 70 °C 26 A<br>(72 V) 3 Poles in Series, 40 °C 30 A<br>(72 V) 3 Poles in Series, 60 °C 30 A<br>(72 V) 3 Poles in Series, 70 °C 26 A |
| Rated Operational<br>Current DC-13 (I <sub>e</sub> ) | (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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

|                                                                         |                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                         | (125 V) 0.55 A / 69 W<br>(220 V) 0.27 A / 60 W<br>(250 V) 0.27 A / 68 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                                                                                                                                                                                                                                   |
| Rated Operational Power<br>AC-3 (P <sub>e</sub> )                       | (415 V) 9 kW<br>(440 V) 9 kW<br>(500 V) 9 kW<br>(690 V) 9 kW<br>(380 / 400 V) 7.5 kW<br>(220 / 230 / 240 V) 4 kW                                                                                                                                                                                                                                                                    |
| Rated Operational Power<br>AC-3e (P <sub>e</sub> )                      | (415 V) 9 kW<br>(440 V) 9 kW<br>(500 V) 9 kW<br>(690 V) 9 kW<br>(380 / 400 V) 7.5 kW<br>(220 / 230 / 240 V) 4 kW                                                                                                                                                                                                                                                                    |
| 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                                                                                                                                                                                                                                      |
| Rated Insulation Voltage<br>(U <sub>i</sub> )                           | acc. to IEC 60947-4-1 690 V<br>acc. to IEC 60947-5-1 690 V<br>acc. to UL/CSA 600 V                                                                                                                                                                                                                                                                                                  |
| Rated Impulse<br>Withstand Voltage (U <sub>imp</sub> )                  | 6 kV                                                                                                                                                                                                                                                                                                                                                                                |
| 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                                                                                                                                                                                                                       |
| Maximum Mechanical<br>Switching Frequency                               | 3600 cycles per hour                                                                                                                                                                                                                                                                                                                                                                |
| Rated Control Circuit<br>Voltage (U <sub>c</sub> )                      | 50 Hz 24 ... 60 V<br>60 Hz 24 ... 60 V<br>DC Operation 20 ... 60 V                                                                                                                                                                                                                                                                                                                  |
| Power Loss                                                              | at 6 A per Pole 0.1 W<br>at Rated Operating Conditions AC-1 per Pole 1.64 W<br>at Rated Operating Conditions AC-3 per Pole 0.6 W                                                                                                                                                                                                                                                    |
| 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                                                                                                              |
| Mounting on DIN Rail                                                    | TH35-15 (35 x 15 mm Mounting Rail) acc. to IEC 60715<br>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<br>Main Circuit                                     | Flexible with Ferrule 1/2x 0.5 ... 4 mm <sup>2</sup><br>Flexible with Insulated Ferrule 1x 0.5 ... 4 mm <sup>2</sup><br>Flexible with Insulated Ferrule 2x 0.5 ... 2.5 mm <sup>2</sup><br>Flexible 1/2x 0.5 ... 4 mm <sup>2</sup><br>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>                                                                                                                                                                                                                                                          |

|                       |                                                                                                                                                                                                   |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                       | 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                                                                                                                                                                          |
| Product Name          | Block Contactor                                                                                                                                                                                   |

Technical UL/CSA

|                                              |                                                                                                                                                                                                                                |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum Operating Voltage UL/CSA             | Main Circuit 600 V                                                                                                                                                                                                             |
| General Use Rating UL/CSA                    | (600 V AC) 30 A                                                                                                                                                                                                                |
| Horsepower Rating UL/CSA                     | (120 V AC) Single Phase 1-1/2 hp<br>(200 ... 208 V AC) Three Phase 5 hp<br>(220 ... 240 V AC) Three Phase 5 hp<br>(240 V AC) Single Phase 3 hp<br>(440 ... 480 V AC) Three Phase 10 hp<br>(550 ... 600 V AC) Three Phase 15 hp |
| Connecting Capacity Main Circuit UL/CSA      | Rigid Solid 1/2x 18-14 AWG<br>Rigid Stranded 1/2x 18-10 AWG                                                                                                                                                                    |
| Connecting Capacity Auxiliary Circuit UL/CSA | Rigid Solid 1/2x 18-14 AWG                                                                                                                                                                                                     |
| Connecting Capacity Control Circuit UL/CSA   | Rigid Solid 1/2x 18-14 AWG                                                                                                                                                                                                     |
| Full Load Amps Motor Use                     | (120 V AC) Single Phase 20 A<br>(200 ... 208 V AC) Three Phase 17.5 A<br>(220 ... 240 V AC) Three Phase 15.2 A<br>(240 V AC) Single Phase 17 A<br>(440 ... 480 V AC) Three Phase 14 A<br>(550 ... 600 V AC) Three Phase 17 A   |

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 Altitude Permissible | Without Derating 3000 m                                                                                     |
| Resistance to Vibrations               | 4g Closed Position & 2g Open position 5 ... 300 Hz                                                          |
| Pollution Degree                       | 3                                                                                                           |

Material Compliance

|                                             |                                                                        |
|---------------------------------------------|------------------------------------------------------------------------|
| Conflict Minerals Reporting Template (CMRT) | 9AKK108467A5658                                                        |
| REACH Declaration                           | 2CMT2021-006202                                                        |
| 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                        |                 |
|-----------------------------------------|-----------------|
| Environmental Product Declaration - EPD | 1SBD250584E3000 |

| Certificates and Declarations    |                                            |
|----------------------------------|--------------------------------------------|
| ABS Certificate                  | ABS_20-2060694-PDA                         |
| CB Certificate                   | CB_SE-113345                               |
| CCC Certificate                  | CCC_2010010304445624                       |
| CQC Certificate                  | CQC2010010304445624<br>CQC2020010304298240 |
| Declaration of Conformity - CCC  | 2020980304001253<br>2020980304001082       |
| Declaration of Conformity - CE   | 1SBD250000U1000                            |
| Declaration of Conformity - UKCA | 1SBD250031U1000                            |
| DNV Certificate                  | DNV_TAE00001AF-4                           |
| LR Certificate                   | LRS_LR23403517TA-02                        |
| RINA Certificate                 | RINA_ELE142224XG                           |
| 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 / Length | 86 mm         |
| Package Level 1 Height         | 45 mm         |
| Package Level 1 Gross Weight   | 0.3 kg        |
| Package Level 1 EAN            | 3471523154711 |
| Package Level 2 Units          | box 21 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   | 13.5 kg       |
| Package Level 3 Units          | 1080 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 >> Iec Contactors                   |

|                    |         |
|--------------------|---------|
| E-Number (Finland) | 3707877 |
| E-Number (Sweden)  | 3210598 |

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## Categories

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Low Voltage Products and Systems → Control Products → Contactors → Block Contactors → AF Contactors → AF16

