



PRODUCT-DETAILS

# AF16-22-00-12

## AF16-22-00-12 48-130V50/60HZ-DC Contactor



General Information

|                       |                                           |
|-----------------------|-------------------------------------------|
| Extended Product Type | AF16-22-00-12                             |
| Product ID            | 1SBL177501R1200                           |
| EAN                   | 3471523116320                             |
| Catalog Description   | AF16-22-00-12 48-130V50/60HZ-DC Contactor |

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Long Description | The AF16-22-00-12 is a 4 pole - 690 V IEC or 600 UL contactor with screw terminals, controlling motors up to 7.5 kW / 400 V AC (AC-3) 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 (48-130 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 |
| 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                                        | 2                                                                                                                                                                                                                                                                                                                                               |
| Number of Main Contacts NC                                        | 2                                                                                                                                                                                                                                                                                                                                               |
| Number of Auxiliary Contacts NO                                   | 0                                                                                                                                                                                                                                                                                                                                               |
| Number of Auxiliary Contacts NC                                   | 0                                                                                                                                                                                                                                                                                                                                               |
| Standards                                                         | IEC/EN 60947-1, IEC/EN 60947-4-1, UL 60947-1, UL 60947-4-1, CAN/CSA C22.2 No.60947-1, CAN/CSA C22.2 No.60947-4-1                                                                                                                                                                                                                                |
| Rated Operational Voltage                                         | Main Circuit 690 V                                                                                                                                                                                                                                                                                                                              |
| Rated Frequency (f)                                               | 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 Θ = 40 °C 35 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 Power AC-3 (P <sub>e</sub> )                    | (400 V) 7.5 kW<br>(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 Withstand Current Low 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 |
| Maximum Breaking 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 Switching Frequency                            | (AC-1) 600 cycles per hour                                                                                                                                                                                                                                                                                                                      |
| Rated Insulation Voltage (U <sub>i</sub> )                        | acc. to IEC 60947-4-1 690 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 48 ... 130 V<br>60 Hz 48 ... 130 V<br>DC Operation 48 ... 130 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                                                                                                                                           |

|                                                               |                                                                                                                                                                                                                                  |
|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 supplied)                             | 2 x M4 screws placed diagonally                                                                                                                                                                                                  |
| Connecting Capacity Main Circuit                              | Flexible with Ferrule 1/2x 0.75 ... 6 mm²<br>Flexible with Insulated Ferrule 1x 0.75 ... 4 mm²<br>Flexible with Insulated Ferrule 2x 0.75 ... 2.5 mm²<br>Rigid Solid 1/2x 1 ... 4 mm²<br>Rigid Stranded 1/2x 1 ... 6 mm²         |
| Connecting Capacity Auxiliary Circuit                         | Rigid Solid 1/2x 1 ... 2.5 mm²<br>Rigid Stranded 1/2x 1 ... 2.5 mm²                                                                                                                                                              |
| Connecting Capacity Control Circuit                           | Flexible with Ferrule 1/2x 0.75 ... 2.5 mm²<br>Flexible with Insulated Ferrule 1x 0.75 ... 2.5 mm²<br>Flexible with Insulated Ferrule 2x 0.75 ... 1.5 mm²<br>Rigid Solid 1/2x 1 ... 2.5 mm²<br>Rigid Stranded 1/2x 1 ... 2.5 mm² |
| Wire Stripping Length                                         | Control Circuit 10 mm<br>Main Circuit 10 mm                                                                                                                                                                                      |
| Degree of Protection                                          | 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

|                                              |                                                             |
|----------------------------------------------|-------------------------------------------------------------|
| Maximum Operating Voltage UL/CSA             | Main Circuit 600 V                                          |
| General Use Rating UL/CSA                    | (600 V AC) 30 A                                             |
| Connecting Capacity Main Circuit UL/CSA      | Rigid Solid 1/2x 16-10 AWG<br>Rigid Stranded 1/2x 16-10 AWG |
| Connecting Capacity Auxiliary Circuit UL/CSA | Rigid Solid 1/2x 18-14 AWG<br>Rigid Stranded 1/2x 18-14 AWG |
| Connecting Capacity Control Circuit UL/CSA   | Rigid Solid 1/2x 18-14 AWG<br>Rigid Stranded 1/2x 18-14 AWG |
| Tightening Torque UL/CSA                     | Control Circuit 11 in-lb<br>Main Circuit 13 in-lb           |

Environmental

|                                            |                                                                                                                                                                                  |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ambient Air Temperature                    | Close to Contactor for Storage -60 ... +80 °C<br>Near Contactor for Operation in Free Air -40 ... 70 °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<br>Open, Shock Direction: B1 5 g<br>Shock Direction: A 30 g<br>Shock Direction: B2 15 g<br>Shock Direction: C1 25 g<br>Shock Direction: C2 25 g |
| Resistance to Vibrations                   | 4g Closed Position & 2g Open position 5 ... 300 Hz                                                                                                                               |

Material Compliance

|                                             |                                                            |
|---------------------------------------------|------------------------------------------------------------|
| Conflict Minerals Reporting Template (CMRT) | 9AKK108467A5658                                            |
| REACH Declaration                           | 2CMT2021-006202                                            |
| RoHS Information                            | 2CMT2021-006277                                            |
| RoHS Status                                 | Following EU Directive 2011/65/EU                          |
| 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) |

## 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   | 1SBD250001U1000                                            |
| Declaration of Conformity<br>- UKCA | 1SBD250032U1000                                            |
| DNV Certificate                     | DNV_TAE00001AF-4                                           |
| EAC Certificate                     | EAC RU FRME77B03447                                        |
| GOST Certificate                    | GOST_POCCFR.ME77.B07175.pdf                                |
| KC Certificate                      | KC_HW02016-15008C                                          |
| LR Certificate                      | LRS_LR23403517TA-02                                        |
| RINA Certificate                    | RINA_ELE084013XG                                           |
| RMRS Certificate                    | RMRS_1802705280                                            |
| UL Certificate                      | UL-US-L319322-13-72119002-5<br>UL-CA-L319322-43-72119002-6 |
| UL Listing Card                     | UL_E319322                                                 |

## 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               | 3471523116320 |
| 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   | 14.58 kg      |
| Package Level 3 Units             | 1296 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<br>Code (IGCC) | 4758 >> Iec Contactors                    |
| E-Number (Finland)                    | 3706350                                   |
| E-Number (Sweden)                     | 3211401                                   |

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## Categories

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

