

## PRODUCT-DETAILS

# AF146-30-22-12

## AF146-30-22-12 Contactor



### General Information

|                       |                          |
|-----------------------|--------------------------|
| Extended Product Type | AF146-30-22-12           |
| Product ID            | 1SFL467001R1222          |
| EAN                   | 7320500476277            |
| Catalog Description   | AF146-30-22-12 Contactor |

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Long Description | <p>The AF146-30-22-12 is a 3 pole - 1000 V IEC or 600 V UL contactor with pre-mounted auxiliary contacts and double clamp, controlling motors up to 75 kW / 400 V AC (AC-3) or 100 hp / 480 V UL and switching power circuits up to 225 A (AC-1) or 200 A UL general use.</p> <p>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.</p> |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Ordering

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

### Popular Downloads

|                                   |                 |
|-----------------------------------|-----------------|
| Data Sheet, Technical Information | 1SBC100192C0206 |
|-----------------------------------|-----------------|

|                          |                 |
|--------------------------|-----------------|
| Instructions and Manuals | 1SFC100003M0201 |
| Dimension Diagram        | 1SFB535001G1051 |

## Dimensions

|                            |         |
|----------------------------|---------|
| Product Net Width          | 90 mm   |
| Product Net Depth / Length | 126 mm  |
| Product Net Height         | 150 mm  |
| Product Net Weight         | 1.55 kg |

## Technical

|                                                       |                                                                                                                                                                                          |
|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of Main Contacts<br>NO                         | 3                                                                                                                                                                                        |
| Number of Main Contacts<br>NC                         | 0                                                                                                                                                                                        |
| Number of Auxiliary<br>Contacts NO                    | 2                                                                                                                                                                                        |
| Number of Auxiliary<br>Contacts NC                    | 2                                                                                                                                                                                        |
| Rated Operational Voltage                             | Main Circuit 1000 V                                                                                                                                                                      |
| Rated Frequency (f)                                   | Main Circuit 50 / 60 Hz                                                                                                                                                                  |
| Conventional Free-air<br>Thermal Current ( $I_{th}$ ) | acc. to IEC 60947-4-1, Open Contactors q = 40 °C 225 A                                                                                                                                   |
| Rated Operational Current<br>AC-1 ( $I_e$ )           | (1000 V) 40 °C 225 A<br>(1000 V) 55 °C 200 A<br>(1000 V) 60 °C 200 A<br>(1000 V) 70 °C 175 A<br>(690 V) 40 °C 225 A<br>(690 V) 55 °C 200 A<br>(690 V) 60 °C 200 A<br>(690 V) 70 °C 175 A |
| Rated Operational Current<br>AC-3 ( $I_e$ )           | (415 V) 55 °C 146 A<br>(440 V) 55 °C 146 A<br>(500 V) 55 °C 130 A<br>(690 V) 55 °C 93 A<br>(1000 V) 55 °C 60 A<br>(380 / 400 V) 55 °C 146 A<br>(220 / 230 / 240 V) 55 °C 146 A           |
| Rated Operational Current<br>AC-3e ( $I_e$ )          | (415 V) 60 °C 146 A<br>(440 V) 60 °C 146 A<br>(500 V) 60 °C 130 A<br>(690 V) 60 °C 93 A<br>(1000 V) 60 °C 60 A<br>(380 / 400 V) 60 °C 146 A<br>(220 / 230 / 240 V) 60 °C 146 A           |
| Rated Operational Power<br>AC-3 ( $P_e$ )             | (415 V) 75 kW<br>(440 V) 90 kW<br>(500 V) 90 kW<br>(690 V) 90 kW<br>(1000 V) 75 kW<br>(380 / 400 V) 75 kW<br>(220 / 230 / 240 V) 45 kW                                                   |
| Rated Operational Power<br>AC-3e ( $P_e$ )            | (415 V) 75 kW<br>(440 V) 90 kW<br>(500 V) 90 kW<br>(690 V) 90 kW<br>(1000 V) 75 kW                                                                                                       |

|                                                                         |                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                         | (380 / 400 V) 75 kW<br>(220 / 230 / 240 V) 45 kW                                                                                                                                                                                                                                                                                                                         |
| Rated Breaking Capacity<br>AC-3                                         | 8 x I <sub>e</sub> AC-3                                                                                                                                                                                                                                                                                                                                                  |
| Rated Breaking Capacity<br>AC-3e                                        | 8.5 x I <sub>e</sub> AC-3e                                                                                                                                                                                                                                                                                                                                               |
| Rated Making Capacity<br>AC-3                                           | 10 x I <sub>e</sub> AC-3                                                                                                                                                                                                                                                                                                                                                 |
| Rated Making Capacity<br>AC-3e                                          | 12 x I <sub>e</sub> AC-3e                                                                                                                                                                                                                                                                                                                                                |
| Short-Circuit Protective<br>Devices                                     | gG Type Fuses 315 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 1168 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 15 min 200 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 1 min 477 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 1 s 1460 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 30 s 674 A                     |
| Maximum Breaking<br>Capacity                                            | cos phi=0.45 (cos phi=0.35 for I <sub>e</sub> > 100 A) at 440 V 3000 A<br>cos phi=0.45 (cos phi=0.35 for I <sub>e</sub> > 100 A) at 690 V 1500 A                                                                                                                                                                                                                         |
| Maximum Electrical<br>Switching Frequency                               | (AC-1) 300 cycles per hour<br>(AC-2 / AC-4) 150 cycles per hour<br>(AC-3) 300 cycles per hour                                                                                                                                                                                                                                                                            |
| Rated Insulation Voltage<br>(U <sub>i</sub> )                           | acc. to IEC 60947-4-1 and VDE 0110 (Gr. C) 1000 V<br>acc. to UL/CSA 600 V                                                                                                                                                                                                                                                                                                |
| Rated Impulse Withstand<br>Voltage (U <sub>imp</sub> )                  | Main Circuit 8 kV                                                                                                                                                                                                                                                                                                                                                        |
| Mechanical Durability                                                   | 5 million                                                                                                                                                                                                                                                                                                                                                                |
| Maximum Mechanical<br>Switching Frequency                               | 300 cycles per hour                                                                                                                                                                                                                                                                                                                                                      |
| Coil Operating Limits                                                   | (acc. to IEC 60947-4-1) 0.85 x U <sub>c</sub> Min. ... 1.1 x U <sub>c</sub> Max. (at θ ≤ 70 °C)                                                                                                                                                                                                                                                                          |
| Rated Control Circuit<br>Voltage (U <sub>c</sub> )                      | 50 Hz 48 ... 130 V<br>60 Hz 48 ... 130 V<br>DC Operation 48 ... 130 V                                                                                                                                                                                                                                                                                                    |
| Coil Consumption                                                        | Holding at Max. Rated Control Circuit Voltage 50 Hz 4 V·A<br>Holding at Max. Rated Control Circuit Voltage 60 Hz 4 V·A<br>Holding at Max. Rated Control Circuit Voltage DC 2.5 W<br>Pull-in at Max. Rated Control Circuit Voltage 50 Hz 180 V·A<br>Pull-in at Max. Rated Control Circuit Voltage 60 Hz 180 V·A<br>Pull-in at Max. Rated Control Circuit Voltage DC 150 W |
| Operate Time                                                            | Between Coil De-energization and NO Contact Opening 37 ... 47 ms<br>Between Coil Energization and NO Contact Closing 25 ... 55 ms                                                                                                                                                                                                                                        |
| Connecting Capacity Main<br>Circuit                                     | Flexible 2 x 10 ... 70 mm <sup>2</sup><br>Rigid Cu-Cable 2 x 10 ... 95 mm <sup>2</sup>                                                                                                                                                                                                                                                                                   |
| Connecting Capacity<br>Auxiliary Circuit                                | Flexible with Ferrule 2x 0.75 ... 2.5 mm <sup>2</sup><br>Flexible with Insulated Ferrule 2x 0.75 ... 2.5 mm <sup>2</sup><br>Flexible 1x0.75 ... 2.5 mm <sup>2</sup><br>Solid 1 x 1 ... 4 mm <sup>2</sup><br>Stranded 2 x 1 ... 4 mm <sup>2</sup>                                                                                                                         |
| 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 IP00                                                                                                                                                                                                                                             |
| Terminal Type                                                           | Double Clamp                                                                                                                                                                                                                                                                                                                                                             |

## Technical UL/CSA

|                                     |                     |
|-------------------------------------|---------------------|
| Maximum Operating<br>Voltage UL/CSA | Main Circuit 1000 V |
| General Use Rating<br>UL/CSA        | (600 V AC) 200 A    |

|                   |                                       |
|-------------------|---------------------------------------|
| Horsepower Rating | (200 V AC) Three Phase 40 hp          |
| UL/CSA            | (208 V AC) Three Phase 40 hp          |
|                   | (220 ... 240 V AC) Three Phase 50 hp  |
|                   | (440 ... 480 V AC) Three Phase 100 hp |
|                   | (550 ... 600 V AC) Three Phase 125 hp |

## Environmental

|                                           |                                                                                                                                                                                                                   |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ambient Air Temperature                   | Close to Contactor Fitted with Thermal O/L Relay (0.85 ... 1.1 Uc) -25 ... 50 °C<br>Close to Contactor without Thermal O/L Relay (0.85 ... 1.1 Uc) -40 ... 70 °C<br>Close to Contactor for Storage -40 ... +70 °C |
| Maximum Operating<br>Altitude Permissible | Without Derating 3000 m                                                                                                                                                                                           |
| RoHS Status                               | Following EU Directive 2011/65/EU and Amendment 2015/863 July 22, 2019                                                                                                                                            |

## Certificates and Declarations (Document Number)

|                                     |                               |
|-------------------------------------|-------------------------------|
| ABS Certificate                     | 14-LD1092198-PDA              |
| BV Certificate                      | BV_36353_A0BV                 |
| CB Certificate                      | SEMKO_SE-70479M1              |
| CCS Certificate                     | GB14T00030                    |
| CQC Certificate                     | CQC2013010304604055           |
| cUL Certificate                     | 20120925-E36588               |
| Declaration of Conformity<br>- CCC  | 2020980304001304              |
| Declaration of Conformity<br>- CE   | 2CMT2015-005439               |
| Declaration of Conformity<br>- UKCA | 2CMT2020-006118               |
| DNV Certificate                     | DNV_E-14043                   |
| DNV GL Certificate                  | DNV_E-14043                   |
| EAC Certificate                     | 9AKK107046A8618               |
| Environmental Information           | 2CMT004732<br>1SAC200032H0002 |
| GL Certificate                      | DNV_E-14043                   |
| Instructions and Manuals            | 1SFC100003M0201               |
| KC Certificate                      | 9AKK107046A9910               |
| LR Certificate                      | LR_14_70011(E1)               |
| PRS Certificate                     | TE_2092_880423_16             |
| RINA Certificate                    | ELE060313XG_002               |
| RMRS Certificate                    | 9AKK107045A6978               |
| RoHS Information                    | 2CMT2015-005439               |
| UL Listing Card                     | UL_E36588                     |

## Container Information

|                                   |             |
|-----------------------------------|-------------|
| Package Level 1 Units             | box 1 piece |
| Package Level 1 Width             | 207 mm      |
| Package Level 1 Depth /<br>Length | 216 mm      |
| Package Level 1 Height            | 150 mm      |

|                              |               |
|------------------------------|---------------|
| Package Level 1 Gross Weight | 1.75 kg       |
| Package Level 1 EAN          | 7320500476277 |

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) | 4755 >> Contactors                        |
| E-Number (Finland)                 | 3706368                                   |

Categories

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

