



PRODUCT-DETAILS

# AF146-30-00-13

## AF146-30-00-13 Contactor



General Information

|                       |                          |
|-----------------------|--------------------------|
| Extended Product Type | AF146-30-00-13           |
| Product ID            | 1SFL467001R1300          |
| EAN                   | 7320500482032            |
| Catalog Description   | AF146-30-00-13 Contactor |

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Long Description | The AF146-30-00-13 is a 3 pole - 1000 V IEC or 600 V UL contactor with 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. Thanks to the AF technology, the contactor has a wide control voltage range (100-250 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

|                                            |                  |
|--------------------------------------------|------------------|
| EPLAN Data                                 | 9AAC174540_EPLAN |
| Data Sheet, Technical Information          | 1SBC100214C0202  |
| Data Sheet, Technical Information (Part 2) | 1SAC200017M0002  |
| Instructions and Manuals                   | 1SFC100003M0201  |
| CAD Dimensional Drawing                    | 2CDC001079B0201  |

Dimensions

|                            |                 |
|----------------------------|-----------------|
| Product Net Width          | 90 mm           |
| Product Net Depth / Length | 126 mm          |
| Product Net Height         | 150 mm          |
| Product Net Weight         | 1.55 kg         |
| Dimension Diagram          | 1SFB535001G1051 |

Technical

|                                                          |                                                                                                                                                                                          |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of Main Contacts NO                               | 3                                                                                                                                                                                        |
| Number of Main Contacts NC                               | 0                                                                                                                                                                                        |
| Number of Auxiliary Contacts NO                          | 0                                                                                                                                                                                        |
| Number of Auxiliary Contacts NC                          | 0                                                                                                                                                                                        |
| Number of Poles                                          | 3P                                                                                                                                                                                       |
| Rated Operational Voltage                                | Main Circuit 1000 V                                                                                                                                                                      |
| Rated Frequency (f)                                      | 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 225 A                                                                                                                                   |
| Rated Operational Current AC-1 (I <sub>e</sub> )         | (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 AC-3 (I <sub>e</sub> )         | (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 AC-3e (I <sub>e</sub> )        | (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 54 A<br>(380 / 400 V) 60 °C 146 A<br>(220 / 230 / 240 V) 60 °C 146 A           |
| Rated Operational Power AC-3 (P <sub>e</sub> )           | (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 AC-3e (P <sub>e</sub> )          | (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                                                                                |

|                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                         | (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 200 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 15 min 674 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 1 min 1460 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 1 s 1168 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 30 s 477 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                                                                                                                                                                                                                                                                                                                                             |
| 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 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                                                                                                                                                                                                                                                                                                                                                                                                |
| 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 100 ... 250 V<br>60 Hz 100 ... 250 V<br>DC Operation 100 ... 250 V                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Coil Consumption                                                        | Holding at Max. Rated Control Circuit Voltage 50 Hz 6 V·A<br>Holding at Max. Rated Control Circuit Voltage 60 Hz 6 V·A<br>Holding at Max. Rated Control Circuit Voltage DC 3 V·A<br>Holding at Max. Rated Control Circuit Voltage DC 3 W<br>Pull-in at Max. Rated Control Circuit Voltage 50 Hz 130 V·A<br>Pull-in at Max. Rated Control Circuit Voltage 60 Hz 130 V·A<br>Pull-in at Max. Rated Control Circuit Voltage DC 135 V·A<br>Pull-in at Max. Rated Control Circuit Voltage DC 135 W |
| Power Loss                                                              | at Rated Operating Conditions per Pole 10 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 mm²<br>Rigid Cu-Cable 2 x 10 ... 95 mm²                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Connecting Capacity<br>Auxiliary Circuit                                | Flexible with Ferrule 2x 0.75 ... 2.5 mm²<br>Flexible with Insulated Ferrule 2x 0.75 ... 2.5 mm²<br>Flexible 2x0.75 ... 2.5 mm²<br>Solid 1 x 1 ... 4 mm²<br>Solid 2 x 1 ... 4 mm²<br>Stranded 2 x 1 ... 4 mm²                                                                                                                                                                                                                                                                                |
| Connecting Capacity                                                     | Flexible 2 x 10 ... 70 mm²<br>Rigid Cu-Cable 2 x 10 ... 95 mm²                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Degree of Protection                                                    | acc. to IEC 60529, IEC 60947-1, EN 60529 Auxiliary Terminals IP40<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 IP00                                                                                                                                                                                                                                                                                            |
| Tightening Torque                                                       | Cable Lug 9 N·m<br>Main Circuit 8 N·m                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Terminal Type                                                           | Double Clamp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Product Name                                                            | Block Contactor                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

## Technical UL/CSA

|                                     |                              |
|-------------------------------------|------------------------------|
| Maximum Operating<br>Voltage UL/CSA | Main Circuit 600 V           |
| General Use Rating<br>UL/CSA        | (1000 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 20 Hp  
 (220 ... 240 V AC) Three Phase 50 hp  
 (440 ... 480 V AC) Three Phase 40 Hp  
 (440 ... 480 V AC) Three Phase 100 hp  
 (550 ... 600 V AC) Three Phase 50 Hp  
 (550 ... 600 V AC) Three Phase 125 hp

Full Load Amps Motor (440 ... 480 V AC) Three Phase 124 A  
 Use (550 ... 600 V AC) Three Phase 125 A

## Environmental

Ambient Air Temperature Close to Contactor Fitted with Thermal O/L Relay (0.85 ... 1.1 Uc) -25 ... 50 °C  
 Close to Contactor Fitted with Thermal O/L Relay (0.85 ... 1.1 Uc) -25 ... 55 °C  
 Close to Contactor without Thermal O/L Relay (0.85 ... 1.1 Uc) -40 ... 70 °C  
 Close to Contactor for Storage -40 ... 70 °C

Maximum Operating Altitude Permissible Without Derating 3000 m

## Material Compliance

Conflict Minerals 9AKK108467A5658  
 Reporting Template (CMRT)  
 REACH Declaration 2CMT2021-006202  
 RoHS Declaration 2CMT2021-006277  
 RoHS Information 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

ABB EcoSolutions Yes  
 ABB Site Meeting Group Waste To Landfill Target Non-hazardous waste is sent to a landfill, where there is no alternative option available within 100km of a facility  
 End Of Life Disassembling Instructions 1SFC100112M0001  
 Environmental Product Declaration - EPD 1SFC100092D0201  
 2TFP200059A1001  
 Improved Energy Efficiency for Customers Product Efficiency - Product requires less energy to operate compared to similar product on market or older products from the same line  
 Recyclability Rate of the Product acc. to EN45555 Design for Closing Resource Loops - Standard EN45555 - 87.8 %  
 Sustainable Material Content in Product (wt. %) Recycled Metal - 37 %

## Certificates and Declarations

A2L Certificate - UL 9AKK108468A6693  
 ABS Certificate 14-LD1092198-PDA  
 BV Certificate BV\_36353\_A0BV  
 CB Certificate SEMKO\_SE-70479M1  
 CCS Certificate GB14T00030  
 CQC Certificate CQC2013010304604055  
 Declaration of Conformity - CCC 2020980304001304  
 Declaration of Conformity - CE 2CMT2015-005439  
 Declaration of Conformity - UKCA 2CMT2020-006118

|                  |                   |
|------------------|-------------------|
| DNV Certificate  | DNV_E-14043       |
| EAC Certificate  | 9AKK107046A8618   |
| KC Certificate   | 9AKK107046A9910   |
| LR Certificate   | LR_14_70011(E1)   |
| PRS Certificate  | TE_2092_880423_16 |
| RINA Certificate | ELE060313XG_002   |
| RMRS Certificate | 9AKK107045A6978   |
| UL Certificate   | 20120925-E36588   |
| UL Listing Card  | UL_E36588         |

## Container Information

|                                |               |
|--------------------------------|---------------|
| Package Level 1 Units          | box 1 piece   |
| Package Level 1 Width          | 207 mm        |
| Package Level 1 Depth / Length | 216 mm        |
| Package Level 1 Height         | 150 mm        |
| Package Level 1 Gross Weight   | 1.75 kg       |
| Package Level 1 EAN            | 7320500482032 |

## External Classifications and Standards

|                                    |                                          |
|------------------------------------|------------------------------------------|
| Object Classification Code         | Q                                        |
| ETIM 7                             | EC000066 - Power contactor, AC switching |
| ETIM 8                             | EC000066 - Power contactor, AC switching |
| ETIM 9                             | EC000066 - Power contactor, AC switching |
| eClass                             | V11.0 : 27371003                         |
| UNSPSC                             | 39121529                                 |
| IDEA Granular Category Code (IGCC) | 4758 >> lec Contactors                   |
| E-Number (Finland)                 | 3706369                                  |

## Accessories

| Identifier      | Description                         | Type       | Quantity | Unit Of Measure |
|-----------------|-------------------------------------|------------|----------|-----------------|
| 1SFN034403R1000 | VM140/190 Mechanical Interlock Unit | VM140/190  | 1        | piece           |
| 1SFN074203R1000 | LY140 Connecting Strip              | LY140      | 1        | piece           |
| 1SFN074207R1000 | LW140 Terminal Enlargement          | LW140      | 1        | piece           |
| 1SFN074208R1000 | LD146-30 Connection Module          | LD146-30   | 1        | piece           |
| 1SFN074210R1000 | LX140 Terminal Extension            | LX140      | 1        | piece           |
| 1SFN074211R1000 | LL146-30 Connection Socket          | LL146-30   | 1        | piece           |
| 1SFN084206R1000 | BEA140/XT2 Connection Set           | BEA140/XT2 | 1        | piece           |
| 1SFN084206R1001 | BEA140/XT4 Connection Set           | BEA140/XT4 | 1        | piece           |
| 1SFN084206R1002 | BEA140/XT3 Connection Set           | BEA140/XT3 | 1        | piece           |
| 1SFN084211R1000 | BER140-4 Connection Set             | BER140-4   | 1        | piece           |
| 1SFN084214R1000 | BEP140-30 Connection Set            | BEP140-30  | 1        | piece           |
| 1SFN084413R1000 | BEY140-4 Connection Set             | BEY140-4   | 1        | piece           |
| 1SFN094200R1000 | PR146-1 Adapter Plate               | PR146-1    | 1        | piece           |
| 1SFN124203R1000 | LT140-30L Terminal Shroud           | LT140-30L  | 1        | piece           |
| 1SFN074208R2000 | LD146-40 Connection Module          | LD146-40   | 1        | piece           |
| 1SFN074211R2000 | LL146-40 connection sockets kit     | LL146-40   | 1        | piece           |
| 1SFN084214R2000 | BEP140-40 Connection Set            | BEP140-40  | 1        | piece           |
| 1SFN124203R2000 | LT140-40L Terminal Shroud           | LT140-40L  | 1        | piece           |

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## Categories

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Low Voltage Products and Systems → Control Products → Contactors → Block Contactors → AF Contactors → AF146

