



PRODUCT-DETAILS

AFS146-30-12-12

AFS146-30-12-12



| General Information   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extended Product Type | AFS146-30-12-12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Product ID            | 1SFL467081R1212                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| EAN                   | 7320500540602                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Catalog Description   | AFS146-30-12-12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Long Description      | <p>The AFS146-30-12-12 is a 3 pole - 1000 V IEC or 600 V UL contactor with pre-mounted 1 left (1 N.O + 1 N.C.) and fixed 1 right (1 N.C.) side mounted auxiliary contact blocks with double clamp connections, 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. AFS contactors can be easily integrated in machine manufacturer's systems complying with main standards EN ISO 13849 and EN 62061 - guaranteeing the safe use of your machinery and equipment. An easily identifiable yellow low energy auxiliary contact block ensures the status feedback circuits required in machine safety applications. 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

|                          |                 |
|--------------------------|-----------------|
| 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         | 1.3 kg |

Technical

|                                                          |                                                                                                                                                                                |
|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of Main Contacts NO                               | 3                                                                                                                                                                              |
| Number of Main Contacts NC                               | 0                                                                                                                                                                              |
| Number of Auxiliary Contacts NO                          | 1                                                                                                                                                                              |
| Number of Auxiliary Contacts NC                          | 2                                                                                                                                                                              |
| 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 $\Theta$ = 40 °C 225 A                                                                                                                  |
| Rated Operational Current AC-1 (I <sub>e</sub> )         | (1000 V) 40 °C 225 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) 60 °C 200 A<br>(690 V) 70 °C 175 A                                      |
| Rated Operational Current AC-3 (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 60 A<br>(380 / 400 V) 60 °C 146 A<br>(220 / 230 / 240 V) 60 °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<br>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<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<br>Withstand 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 4 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<br>Main Circuit                                     | Flexible 1 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 2 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 600 V |
|-------------------------------------|--------------------|

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

Environmental

|                                           |                                                                                                                                                                                                                  |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ambient Air<br>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                                                                                                                                                                                          |

Material Compliance

|                                                   |                                                                        |
|---------------------------------------------------|------------------------------------------------------------------------|
| Conflict Minerals<br>Reporting Template<br>(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<br>Control Act - TSCA            | 2CMT2023-006525                                                        |
| WEEE B2C / B2B                                    | Business To Business                                                   |
| WEEE Category                                     | 5. Small Equipment (No External Dimension More Than 50 cm)             |

Circular Value

|                                                     |                                                                                                                                         |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| ABB EcoSolutions                                    | Yes                                                                                                                                     |
| Circular Design<br>Principles Recyclability<br>Rate | Design for Closing Resource Loops - Standard EN45555 - 87.8 %                                                                           |
| End of Life Instructions                            | 1SFC100112M0001                                                                                                                         |
| Group Waste to Landfill<br>Target                   | Non-hazardous waste is sent to a landfill, where there is no alternative option available within 100km of a facility                    |
| Improved Resource<br>Efficiency for Customers       | Product Efficiency - Product requires less energy to operate compared to similar product on market or older products from the same line |
| Sustainable Material<br>Content                     | Recycled Metal - 37 %                                                                                                                   |

Eco Transparency

|                                            |                 |
|--------------------------------------------|-----------------|
| Environmental Product<br>Declaration - EPD | 1SFC100092D0201 |
|--------------------------------------------|-----------------|

Certificates and Declarations

|                                    |                     |
|------------------------------------|---------------------|
| CB Certificate                     | SEMKO_SE-70479M1    |
| CQC Certificate                    | CQC2013010304604055 |
| Declaration of<br>Conformity - CCC | 2020980304001304    |
| Declaration of<br>Conformity - CE  | 2CMT2018-005695     |

|                                     |                 |
|-------------------------------------|-----------------|
| Declaration of<br>Conformity - UKCA | 2CMT2020-006125 |
| EAC Certificate                     | 1SFC101360D1101 |
| UL Certificate                      | 20120925-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<br>Weight   | 1.5 kg        |
| Package Level 1 EAN               | 7320500540602 |

Classifications

|                                       |                                           |
|---------------------------------------|-------------------------------------------|
| Object Classification<br>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) | 4755 >> Contactors                        |
| E-Number (Finland)                    | 3708097                                   |

Accessories

| Identifier      | Description                      | Type      | Quantity | Unit Of Measure |
|-----------------|----------------------------------|-----------|----------|-----------------|
| 1SFN010832R1010 | CEL19-10 Auxiliary Contact Block | CEL19-10  | 1        | piece           |
| 1SFN010832R1001 | CEL19-01 Auxiliary Contact Block | CEL19-01  | 1        | piece           |
| 1SFN010820R1011 | CAL19-11 Auxiliary Contact Block | CAL19-11  | 1        | piece           |
| 1SFN074208R1000 | LD146-30 Connection Module       | LD146-30  | 1        | piece           |
| 1SFN124203R1000 | LT140-30L Terminal Shroud        | LT140-30L | 1        | piece           |
| 1SFN074207R1000 | LW140 Terminal Enlargement       | LW140     | 1        | piece           |
| 1SFN074210R1000 | LX140 Terminal Extension         | LX140     | 1        | piece           |
| 1SFN074203R1000 | LY140 Connecting Strip           | LY140     | 1        | piece           |
| 1SFN124801R1000 | LT205-30C Terminal Shroud        | LT205-30C | 1        | piece           |
| 1SFN124803R1000 | LT205-30L Terminal Shroud        | LT205-30L | 1        | piece           |
| 1SFN124804R1000 | LT205-30Y Terminal Shroud        | LT205-30Y | 1        | piece           |
| 1SFN074807R1000 | LW205 Terminal Enlargement       | LW205     | 1        | piece           |
| 1SFN074810R1000 | LX205 Terminal Extension         | LX205     | 1        | piece           |
| 1SFN074703R1000 | LY185 Connecting Strip           | LY185     | 1        | piece           |
| 1SFN075103R1000 | LY300 Connecting Strip           | LY300     | 1        | piece           |
| 1SFN075410R1000 | LX370 Terminal Extension         | LX370     | 1        | piece           |
| 1SFN125406R1000 | LT370-30D Terminal Shroud        | LT370-30D | 1        | piece           |
| 1SFN125404R1000 | LT370-30Y Terminal Shroud        | LT370-30Y | 1        | piece           |
| 1SFN125403R1000 | LT370-30L Terminal Shroud        | LT370-30L | 1        | piece           |
| 1SFN125401R1000 | LT370-30C Terminal Shroud        | LT370-30C | 1        | piece           |

Categories

Low Voltage Products and Systems → Control Products → Contactors → Block Contactors → AFS Contactors → AFS146

