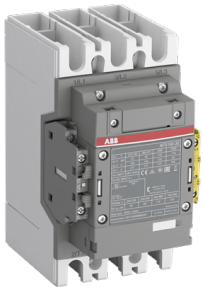
PRODUCT-DETAILS

# AFS190-30-12-11

AFS190-30-12-11



## General Information

| | |
|---|---|
| Extended Product Type | AFS190-30-12-11 |
| Product ID | 1SFL487082R1112 |
| EAN | 7320500540503 |
| Catalog Description | AFS190-30-12-11 |
| Long Description | The AFS190-30-12-11 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 Main Circuit Bars connections, controlling motors up to 90 kW / 400 V AC (AC-3) or 125 hp / 480 V UL and switching power circuits up to 275 A (AC-1) or 250 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 (24-60 V 50/60 Hz and 20-60 V DC), managing large control voltage variations, reducing panel energy consumptions and ensuring distinct operations in unstable networks. Furthermore, surge protection is built-in, offering a compact solution. AF contactors have a block type design, can be easily extended with add-on auxiliary contact blocks and an additional wide range of accessories. |

## Ordering

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

## Popular Downloads

| | |
|---|---|
| EPLAN Data | 9AAC412759_EPLAN |
| Data Sheet, Technical Information | 1SBC100214C0202 |
| Data Sheet, Technical Information (Part 2) | 1SAC200017M0002 |
| Instructions and Manuals | 1SFC100008M0201 |
| CAD Dimensional Drawing | 2CDC001079B0201 |

## Dimensions

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|---|---|
| Product Net Width | 105 mm |
| Product Net Depth / Length | 152 mm |
| Product Net Height | 196 mm |
| Product Net Weight | 2.4 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 |
| Number of Poles | 3P |
| Rated Operational Voltage | Main Circuit 1000 V |
| Rated Frequency (f) | Main Circuit 50 / 60 Hz |
| Conventional Free-air Thermal Current ($I_{th}$) | acc. to IEC 60947-4-1, Open Contactors Θ = 40 °C 275 A |
| Rated Operational Current AC-1 ($I_e$) | (1000 V) 40 °C 250 A<br>(1000 V) 60 °C 225 A<br>(1000 V) 70 °C 185 A<br>(690 V) 40 °C 275 A<br>(690 V) 60 °C 250 A<br>(690 V) 70 °C 200 A |
| Rated Operational Current AC-3 ($I_e$) | (415 V) 60 °C 190 A<br>(440 V) 60 °C 190 A<br>(500 V) 60 °C 135 A<br>(690 V) 60 °C 135 A<br>(1000 V) 60 °C 85 A<br>(380 / 400 V) 60 °C 190 A<br>(220 / 230 / 240 V) 60 °C 190 A |
| Rated Operational Current AC-3e ($I_e$) | (415 V) 60 °C 190 A<br>(440 V) 60 °C 190 A<br>(500 V) 60 °C 135 A<br>(690 V) 60 °C 135 A<br>(1000 V) 60 °C 85 A<br>(380 / 400 V) 60 °C 190 A<br>(220 / 230 / 240 V) 60 °C 190 A |

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| | |
|---|---|
| Rated Operational Current DC-1 ($I_e$) | (110 V) 2 Poles in Series, 40 °C 250 A<br>(220 V) 3 Poles in Series, 40 °C 250 A |
| Rated Operational Current DC-3 ($I_e$) | (110 V) 2 Poles in Series, 40 °C 250 A<br>(220 V) 3 Poles in Series, 40 °C 250 A |
| Rated Operational Current DC-5 ($I_e$) | (110 V) 2 Poles in Series, 40 °C 250 A<br>(220 V) 3 Poles in Series, 40 °C 250 A |
| Rated Operational Power AC-3 ($P_e$) | (415 V) 90 kW<br>(440 V) 110 kW<br>(500 V) 90 kW<br>(690 V) 132 kW<br>(1000 V) 110 kW<br>(380 / 400 V) 90 kW<br>(220 / 230 / 240 V) 55 kW |
| Rated Operational Power AC-3e ($P_e$) | (415 V) 90 kW<br>(440 V) 110 kW<br>(500 V) 90 kW<br>(690 V) 132 kW<br>(1000 V) 110 kW<br>(380 / 400 V) 90 kW<br>(220 / 230 / 240 V) 55 kW |
| Rated Breaking Capacity AC-3 | 8 x Ie AC-3 |
| Rated Breaking Capacity AC-3e | 8.5 x Ie AC-3e |
| Rated Making Capacity AC-3 | 10 x Ie AC-3 |
| Rated Making Capacity AC-3e | 12 x Ie AC-3e |
| Short-Circuit Protective Devices | gG Type Fuses 355 A |
| Rated Short-time Withstand Current Low Voltage ($I_{cw}$) | at 40 °C Ambient Temp, in Free Air, from a Cold State 10 s 1520 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 15 min 275 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 1 min 621 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 1 s 1900 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 30 s 878 A |
| Maximum Breaking Capacity | cos phi=0.45 (cos phi=0.35 for Ie > 100 A) at 440 V 3300 A<br>cos phi=0.45 (cos phi=0.35 for Ie > 100 A) at 690 V 2200 A |
| Rated Insulation Voltage ($U_i$) | acc. to IEC 60947-4-1 and VDE 0110 (Gr. C) 1000 V<br>acc. to UL/CSA 600 V |
| Rated Impulse Withstand Voltage ($U_{imp}$) | Main Circuit 8 kV |
| Maximum Electrical 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 Switching Frequency | 300 cycles per hour |
| Coil Operating Limits | (acc. to IEC 60947-4-1) 0.85 x Uc Min. ... 1.1 x Uc Max. (at θ ≤ 70 °C) |
| Rated Control Circuit Voltage ($U_c$) | 50 Hz 24 ... 60 V<br>60 Hz 24 ... 60 V<br>DC Operation 20 ... 60 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 2.5 W<br>Pull-in at Max. Rated Control Circuit Voltage 50 Hz 165 V·A<br>Pull-in at Max. Rated Control Circuit Voltage 60 Hz 165 V·A<br>Pull-in at Max. Rated Control Circuit Voltage DC 205 W |
| Power Loss | at Rated Operating Conditions per Pole 7 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 Circuit | Flexible 2 x 50 ... 95 mm²<br>Rigid Al-Cable 1 x 95 ... 185 mm²<br>Rigid Cu-Cable 1 x 6 ... 150 mm² |

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| | |
|---|---|
| Connecting Capacity Auxiliary Circuit | Flexible with Ferrule 1x 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 2 x 1 ... 4 mm²<br>Stranded 2 x 1 .... 4 mm² |
| Connecting Capacity | Flexible 2 x 50 ... 95 mm²<br>Rigid Al-Cable 1 x 95 ... 185 mm²<br>Rigid Cu-Cable 1 x 6 ... 150 mm² |
| 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 |
| Recommended Screw Driver | Main Circuit M8<br>Control Circuit M3.5<br>Control Circuit 5.5<br>Control Circuit Pozidriv 2 |
| Tightening Torque | Cable Lug 18 N·m<br>Main Circuit 14 ... 31 N·m |
| Terminal Type | Main Circuit: Bars |
| Product Name | Block Contactor |

## Technical UL/CSA

| | |
|---|---|
| Maximum Operating Voltage UL/CSA | Main Circuit 600 V |
| General Use Rating UL/CSA | (600 V AC) 250 A |
| Horsepower Rating UL/CSA | (200 ... 208 V AC) Three Phase 50 hp<br>(220 ... 240 V AC) Three Phase 60 hp<br>(440 ... 480 V AC) Three Phase 125 hp<br>(550 ... 600 V AC) Three Phase 150 hp |
| Full Load Amps Motor Use | (200 ... 208 V AC) Three Phase 150 A<br>(220 ... 240 V AC) Three Phase 154 A<br>(440 ... 480 V AC) Three Phase 156 A<br>(550 ... 600 V AC) Three Phase 144 A |

## 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 Altitude Permissible | Without Derating 3000 m |

## Material Compliance

| | |
|---|---|
| Conflict Minerals Reporting Template (CMRT) | 9AKK108467A5658 |
| 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

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| | |
|---|---|
| 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 | 1SFC100095D0201 |
| 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 - 79.2 % |
| Sustainable Material Content in Product (wt. %) | Recycled Metal - 35 % |

## Certificates and Declarations

| | |
|---|---|
| CB Certificate | SE-82315 |
| CQC Certificate | CQC2014010304676685 |
| Declaration of Conformity - CCC | 2020980304001306 |
| Declaration of Conformity - CE | 2CMT2018-005695 |
| Declaration of Conformity - UKCA | 2CMT2020-006125 |
| EAC Certificate | 1SFC101360D1101 |
| SUVA Certificate | 2CMT2019-005857 |
| UL Certificate | 20121023-E36588 |

## Container Information

| | |
|---|---|
| Package Level 1 Units | box 1 piece |
| Package Level 1 Width | 160 mm |
| Package Level 1 Depth / Length | 258 mm |
| Package Level 1 Height | 235 mm |
| Package Level 1 Gross Weight | 3 kg |
| Package Level 1 EAN | 7320500540503 |

## 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) | 4755 >> Contactors |
| E-Number (Finland) | 3709002 |

## Accessories

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| 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 → AFS190

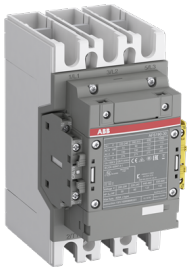


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