



PRODUCT-DETAILS

# AFS80-30-22-13

## AFS80-30-22-13 100-250V50/60HZ-DC

### Contactors



| General Information   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extended Product Type | AFS80-30-22-13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Product ID            | 1SBL397082R1322                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| EAN                   | 3471523157934                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Catalog Description   | AFS80-30-22-13 100-250V50/60HZ-DC Contactor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Long Description      | <p>The AFS80-30-22-13 is a 3 pole - 1000 V IEC or 600 V UL contactor with fixed 2 N.O + 2 N.C. front mounted auxiliary contact blocks with screw connections, controlling motors up to 37 kW / 400 V AC (AC-3) or 60 hp / 480 V UL and switching power circuits up to 125 A (AC-1) or 105 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 (100 ... 250 V), 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 | 1SBC100220C0201  |
| Instructions and Manuals          | 1SBC101052M6801  |
| CAD Dimensional Drawing           | 2CDC001079B0201  |
| Dimension Diagram                 | DNV_TAE00001AF-4 |

| Dimensions                 |          |
|----------------------------|----------|
| Product Net Width          | 70 mm    |
| Product Net Depth / Length | 149 mm   |
| Product Net Height         | 125.5 mm |
| Product Net Weight         | 1.22 kg  |

| Technical                                                |                                                                                                                                                                           |
|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of Main Contacts NO                               | 3                                                                                                                                                                         |
| Number of Main Contacts NC                               | 0                                                                                                                                                                         |
| Number of Auxiliary Contacts NO                          | 2                                                                                                                                                                         |
| Number of Auxiliary Contacts NC                          | 2                                                                                                                                                                         |
| Standards                                                | IEC/EN 60947-1, IEC/EN 60947-4-1, UL 60947-1, UL 60947-4-1, CSA C22.2 No. 60947-1:22, CSA C22.2 No. 60947-4-1:22                                                          |
| Rated Operational Voltage                                | Auxiliary Circuit 690 V<br>Main Circuit 1000 V                                                                                                                            |
| Rated Frequency (f)                                      | Auxiliary Circuit 50 / 60 Hz<br>Control Circuit 50 / 60 Hz<br>Main Circuit 50 / 60 Hz                                                                                     |
| Conventional Free-air Thermal Current (I <sub>th</sub> ) | acc. to IEC 60947-4-1, Open Contactors $\Theta = 40\text{ }^{\circ}\text{C}$ 130 A<br>acc. to IEC 60947-5-1, $\Theta = 40\text{ }^{\circ}\text{C}$ 16 A                   |
| Rated Operational Current AC-1 (I <sub>e</sub> )         | (690 V) 40 °C 125 A<br>(690 V) 60 °C 100 A<br>(690 V) 70 °C 85 A                                                                                                          |
| Rated Operational Current AC-3 (I <sub>e</sub> )         | (415 V) 60 °C 80 A<br>(440 V) 60 °C 80 A<br>(500 V) 60 °C 65 A<br>(690 V) 60 °C 49 A<br>(1000 V) 60 °C 25 A<br>(380 / 400 V) 60 °C 80 A<br>(220 / 230 / 240 V) 60 °C 80 A |
| Rated Operational Current AC-3e (I <sub>e</sub> )        | (415 V) 60 °C 80 A<br>(440 V) 60 °C 80 A<br>(500 V) 60 °C 65 A<br>(690 V) 60 °C 49 A<br>(380 / 400 V) 60 °C 80 A<br>(220 / 230 / 240 V) 60 °C 80 A                        |
| Rated Operational Power AC-3 (P <sub>e</sub> )           | (400 V) 37 kW<br>(415 V) 45 kW<br>(440 V) 45 kW<br>(500 V) 45 kW<br>(690 V) 45 kW                                                                                         |

|                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                         | (380 / 400 V) 37 kW<br>(220 / 230 / 240 V) 22 kW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Rated Operational Power<br>AC-3e (P <sub>e</sub> )                      | (415 V) 45 kW<br>(440 V) 45 kW<br>(500 V) 45 kW<br>(690 V) 45 kW<br>(380 / 400 V) 37 kW<br>(220 / 230 / 240 V) 22 kW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Rated Operational<br>Current AC-15 (I <sub>e</sub> )                    | (500 V) 2 A<br>(690 V) 2 A<br>(24 / 127 V) 6 A<br>(220 / 240 V) 4 A<br>(400 / 440 V) 3 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 780 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 15 min 140 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 1 min 300 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 1 s 1200 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 30 s 450 A<br>for 0.1 s 140 A<br>for 1 s 100 A                                                                                                                                                                                                                                                                                                                                          |
| Maximum Breaking<br>Capacity                                            | cos phi=0.45 (cos phi=0.35 for I <sub>e</sub> > 100 A) at 440 V 1150 A<br>cos phi=0.45 (cos phi=0.35 for I <sub>e</sub> > 100 A) at 690 V 750 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Maximum Electrical<br>Switching Frequency                               | (AC-1) 600 cycles per hour<br>(AC-15) 1200 cycles per hour<br>(AC-2 / AC-4) 150 cycles per hour<br>(AC-3) 1200 cycles per hour<br>(DC-13) 900 cycles per hour                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Rated Operational<br>Current DC-1 (I <sub>e</sub> )                     | (110 V) 2 Poles in Series, 40 °C 125 A<br>(110 V) 2 Poles in Series, 60 °C 100 A<br>(110 V) 2 Poles in Series, 70 °C 85 A<br>(110 V) 3 Poles in Series, 40 °C 125 A<br>(110 V) 3 Poles in Series, 60 °C 100 A<br>(110 V) 3 Poles in Series, 70 °C 85 A<br>(220 V) 3 Poles in Series, 40 °C 125 A<br>(220 V) 3 Poles in Series, 60 °C 100 A<br>(220 V) 3 Poles in Series, 70 °C 85 A<br>(72 V) 1-Pole, 40 °C 125 A<br>(72 V) 1-Pole, 60 °C 100 A<br>(72 V) 1-Pole, 70 °C 85 A<br>(72 V) 2 Poles in Series, 40 °C 125 A<br>(72 V) 2 Poles in Series, 60 °C 100 A<br>(72 V) 2 Poles in Series, 70 °C 85 A<br>(72 V) 3 Poles in Series, 40 °C 125 A<br>(72 V) 3 Poles in Series, 60 °C 100 A<br>(72 V) 3 Poles in Series, 70 °C 85 A |
| Rated Operational<br>Current DC-3 (I <sub>e</sub> )                     | (110 V) 2 Poles in Series, 40 °C 125 A<br>(110 V) 2 Poles in Series, 60 °C 100 A<br>(110 V) 2 Poles in Series, 70 °C 85 A<br>(110 V) 3 Poles in Series, 40 °C 125 A<br>(110 V) 3 Poles in Series, 60 °C 100 A<br>(110 V) 3 Poles in Series, 70 °C 85 A<br>(220 V) 3 Poles in Series, 40 °C 125 A<br>(220 V) 3 Poles in Series, 60 °C 100 A<br>(220 V) 3 Poles in Series, 70 °C 85 A<br>(72 V) 1-Pole, 40 °C 125 A<br>(72 V) 1-Pole, 60 °C 100 A<br>(72 V) 1-Pole, 70 °C 85 A<br>(72 V) 2 Poles in Series, 40 °C 125 A<br>(72 V) 2 Poles in Series, 60 °C 100 A<br>(72 V) 2 Poles in Series, 70 °C 85 A<br>(72 V) 3 Poles in Series, 40 °C 125 A<br>(72 V) 3 Poles in Series, 60 °C 100 A<br>(72 V) 3 Poles in Series, 70 °C 85 A |
| Rated Operational<br>Current DC-5 (I <sub>e</sub> )                     | (110 V) 2 Poles in Series, 40 °C 125 A<br>(110 V) 2 Poles in Series, 60 °C 100 A<br>(110 V) 2 Poles in Series, 70 °C 85 A<br>(110 V) 3 Poles in Series, 40 °C 125 A<br>(110 V) 3 Poles in Series, 60 °C 100 A<br>(110 V) 3 Poles in Series, 70 °C 85 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

|                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                        | (220 V) 3 Poles in Series, 40 °C 125 A<br>(220 V) 3 Poles in Series, 60 °C 100 A<br>(220 V) 3 Poles in Series, 70 °C 85 A<br>(72 V) 1-Pole, 40 °C 125 A<br>(72 V) 1-Pole, 60 °C 100 A<br>(72 V) 1-Pole, 70 °C 85 A<br>(72 V) 2 Poles in Series, 40 °C 125 A<br>(72 V) 2 Poles in Series, 60 °C 100 A<br>(72 V) 2 Poles in Series, 70 °C 85 A<br>(72 V) 3 Poles in Series, 40 °C 125 A<br>(72 V) 3 Poles in Series, 60 °C 100 A<br>(72 V) 3 Poles in Series, 70 °C 85 A |
| Rated Operational<br>Current DC-13 (I <sub>e</sub> )   | (24 V) 6 A / 144 W<br>(48 V) 2.8 A / 134 W<br>(72 V) 1 A / 72 W<br>(110 V) 0.55 A / 60 W<br>(125 V) 0.55 A / 69 W<br>(220 V) 0.27 A / 60 W<br>(250 V) 0.27 A / 68 W<br>(400 V) 0.15 A / 60 W<br>(500 V) 0.13 A / 65 W<br>(600 V) 0.1 A / 60 W                                                                                                                                                                                                                          |
| Rated Insulation Voltage<br>(U <sub>i</sub> )          | acc. to IEC 60947-4-1 1000 V<br>acc. to IEC 60947-5-1 690 V<br>acc. to UL/CSA 600 V                                                                                                                                                                                                                                                                                                                                                                                    |
| Rated Impulse<br>Withstand Voltage (U <sub>imp</sub> ) | 8 kV                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Maximum Mechanical<br>Switching Frequency              | 3600 cycles per hour                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 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                                                                                                                                                                                                                                                                                                                                                                                               |
| Operate Time                                           | Between Coil De-energization and NC Contact Closing 19 ... 105 ms<br>Between Coil De-energization and NO Contact Opening 17 ... 100 ms<br>Between Coil Energization and NC Contact Opening 38 ... 95 ms<br>Between Coil Energization and NO Contact Closing 42 ... 100 ms                                                                                                                                                                                              |
| Mounting on DIN Rail                                   | TH35-15 (35 x 15 mm Mounting Rail) acc. to IEC 60715                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Mounting by Screws (not<br>supplied)                   | 2 x M4 or 2 x M6 screws placed diagonally                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Connecting Capacity<br>Main Circuit                    | Flexible with Ferrule 1/2x 6 ... 50 mm <sup>2</sup><br>Flexible with Insulated Ferrule 1/2x 6 ... 50 mm <sup>2</sup><br>Rigid Stranded 1x 6 ... 70 mm <sup>2</sup><br>Rigid Stranded 2x 6 ... 50 mm <sup>2</sup>                                                                                                                                                                                                                                                       |
| Connecting Capacity<br>Auxiliary Circuit               | Flexible with Ferrule 1/2x 0.75 ... 2.5 mm <sup>2</sup><br>Flexible with Insulated Ferrule 2x 0.75 ... 1.5 mm <sup>2</sup><br>Flexible with Insulated Ferrule 1x 0.75 ... 2.5 mm <sup>2</sup><br>Rigid 1/2x 1 ... 2.5 mm <sup>2</sup>                                                                                                                                                                                                                                  |
| Connecting Capacity<br>Control Circuit                 | Flexible with Ferrule 1/2x 0.75 ... 2.5 mm <sup>2</sup><br>Flexible with Insulated Ferrule 1x 0.75 ... 2.5 mm <sup>2</sup><br>Flexible with Insulated Ferrule 2x 0.75 ... 1.5 mm <sup>2</sup><br>Rigid 1/2x 1 ... 2.5 mm <sup>2</sup>                                                                                                                                                                                                                                  |
| Wire Stripping Length                                  | Auxiliary Circuit 10 mm<br>Control Circuit 10 mm<br>Main Circuit 17 mm                                                                                                                                                                                                                                                                                                                                                                                                 |
| Degree of Protection                                   | acc. to IEC 60529, IEC 60947-1, EN 60529 Auxiliary Terminals IP20<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 IP10                                                                                                                                                                                                                                                                      |
| Terminal Type                                          | Screw Terminals                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

## Technical UL/CSA

|                                     |                    |
|-------------------------------------|--------------------|
| Maximum Operating<br>Voltage UL/CSA | Main Circuit 600 V |
| General Use Rating                  | (600 V AC) 105 A   |

|                     |                                      |
|---------------------|--------------------------------------|
| UL/CSA              |                                      |
| Horsepower Rating   | (120 V AC) Single Phase 7-1/2 hp     |
| UL/CSA              | (200 ... 208 V AC) Three Phase 25 hp |
|                     | (220 ... 240 V AC) Three Phase 30 hp |
|                     | (240 V AC) Single Phase 15 hp        |
|                     | (440 ... 480 V AC) Three Phase 60 hp |
|                     | (550 ... 600 V AC) Three Phase 75 hp |
| Connecting Capacity | Rigid Stranded 1/2x 6-1 AWG          |
| Main Circuit UL/CSA |                                      |
| Tightening Torque   | Auxiliary Circuit 11 in-lb           |
| UL/CSA              | Control Circuit 11 in-lb             |
|                     | Main Circuit 53 in-lb                |

Environmental

|                                            |                                                                |
|--------------------------------------------|----------------------------------------------------------------|
| Ambient Air Temperature                    | Close to Contactor Fitted with Thermal O/L Relay -40 ... 70 °C |
|                                            | Close to Contactor without Thermal O/L Relay -40 ... 70 °C     |
|                                            | Close to Contactor for Storage -60 ... +80 °C                  |
| Climatic Withstand                         | Category B according to IEC 60947-1 Annex Q                    |
| Maximum Operating Altitude Permissible     | Without Derating 3000 m                                        |
| Resistance to Shock acc. to IEC 60068-2-27 | Closed, Shock Direction: A 25 g                                |
|                                            | Closed, Shock Direction: B1 25 g                               |
|                                            | Closed, Shock Direction: B2 15 g                               |
|                                            | Closed, Shock Direction: C1 25 g                               |
|                                            | Closed, Shock Direction: C2 25 g                               |
| Resistance to Vibrations                   | 3g Closed Position & 3g Open Position 5 ... 300 Hz             |

Material Compliance

|                                             |                                                            |
|---------------------------------------------|------------------------------------------------------------|
| Conflict Minerals Reporting Template (CMRT) | 9AKK108467A5658                                            |
| REACH Declaration                           | 2CMT2021-006202                                            |
| RoHS Information                            | 2CMT2021-006277                                            |
| RoHS Status                                 | Following EU Directive 2011/65/EU                          |
| Toxic Substances Control Act - TSCA         | 2CMT2023-006525                                            |
| WEEE B2C / B2B                              | Business To Business                                       |
| WEEE Category                               | 5. Small Equipment (No External Dimension More Than 50 cm) |

ABB EcoSolutions

|                                           |                             |
|-------------------------------------------|-----------------------------|
| Environmental Product Declaration - EPD   | 1SBD250584E2000             |
| Sustainable Material Content              | Recycled Metal - 28.2 %     |
| Sustainable Material Content in Packaging | FSC Recycled Paper - 94.6 % |
| End of Life Instructions                  | 1SBC101081M6801             |

Certificates and Declarations

|                 |                      |
|-----------------|----------------------|
| ABS Certificate | ABS_20-2060694-PDA   |
| BV Certificate  | BV_2634H36994B1      |
| CB Certificate  | CB_SE-96557          |
| CCC Certificate | CQC_2013010304646569 |

|                                     |                                                                |
|-------------------------------------|----------------------------------------------------------------|
| Declaration of<br>Conformity - CCC  | 2020980304001255                                               |
| Declaration of<br>Conformity - CE   | 1SBD250022U1000                                                |
| Declaration of<br>Conformity - UKCA | 1SBD250044U1000                                                |
| DNV Certificate                     | DNV_TAE00001AF-4                                               |
| LR Certificate                      | LRS_LR23403517TA-02                                            |
| RMRS Certificate                    | RMRS_1802705280                                                |
| UL Certificate                      | UL-US-L312527-1141-10303102-9<br>UL-CA-L312527-4141-10303102-9 |
| UL Listing Card                     | E312527                                                        |

Container Information

|                                   |               |
|-----------------------------------|---------------|
| Package Level 1 Units             | box 1 piece   |
| Package Level 1 Width             | 167 mm        |
| Package Level 1 Depth /<br>Length | 180 mm        |
| Package Level 1 Height            | 97 mm         |
| Package Level 1 Gross<br>Weight   | 1.36 kg       |
| Package Level 1 EAN               | 3471523157934 |
| Package Level 2 Units             | box 6 piece   |
| Package Level 2 Width             | 250 mm        |
| Package Level 2 Depth /<br>Length | 300 mm        |
| Package Level 2 Height            | 300 mm        |
| Package Level 2 Gross<br>Weight   | 8.16 kg       |
| Package Level 3 Units             | 144 piece     |

Classifications

|                                       |                                          |
|---------------------------------------|------------------------------------------|
| Object Classification<br>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<br>Code (IGCC) | 4758 >> lec Contactors                   |
| E-Number (Finland)                    | 3708071                                  |
| E-Number (Sweden)                     | 3210674                                  |

Accessories

| Identifier      | Description                     | Type    | Quantity | Unit Of<br>Measure |
|-----------------|---------------------------------|---------|----------|--------------------|
| ISBN010120R1011 | CAL4-11 Auxiliary Contact Block | CAL4-11 | 1        | piece              |

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## Categories

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Low Voltage Products and Systems → Control Products → Contactors → Block Contactors → AFS Contactors → AFS80

