General Information

| Extended Product Type: | AF12Z-30-10-20 |
| :---: | :---: |
| Product ID: | 1SBL156001R2010 |
| EAN: | 3471523113503 |
| Catalog Description: | AF12Z-30-10-20 12-20VDC Contactor |
| Long Description: | AF12Z contactors are used for controlling power circuits up to 690 VAC and 220 V DC. They are mainly used for controlling 3 -phase motors, non-inductive or slightly inductive loads. AF..Z contactors include an electronic coil interface accepting a wide control voltage Uc min. ... Uc max. Only four coils cover control voltages between $24 \ldots 250 \mathrm{~V} 50 / 60 \mathrm{~Hz}$ or $12 . .250 \mathrm{~V}$ DC. AF.. $Z$ contactors can manage large control voltage variations. One coil can be used for different control voltages used worldwide without any coil change. AF..Z contactors allow direct control by PLC-output $\geq 24 \mathrm{~V}$ DC 500 mA and obtain a reduced holding coil consumption. AF..Z contactors withstand short voltage dips and voltage sags (SEMI F47-0706 compliance) between $24 . . .250 \mathrm{~V} 50 / 60 \mathrm{~Hz} \mathrm{AF}$.. $Z$ contactors have built-in surge protection and do not require additional surge suppressors The AF... series 1 -stack 3 pole contactors are of the block type design. - Main poles and auxiliary contact blocks: 3 main poles, 1 built-in auxiliary contact, front and side-mounted add-on auxiliary contact blocks. (mechanically-linked auxiliary contacts compliant with Annex L of IEC 60947-5-1. N.C. mirror contacts compliant with Annex F of IEC 60947-4-1) - Control circuit: DC operated for AF..Z-30-..-20 contactors. Only AF..Z-30-..-20 contactors need to respect the polarity on the coil terminals (A1+ and A2-). - Accessories: a wide range of accessories is available. |

## Categories

Products » Low Voltage Products and Systems » Control Products » Contactors » Block Contactors
Ordering

| Minimum Order Quantity: | 1 piece |
| :--- | :--- |
| Customs Tariff Number: | 85369085 |
| EAN: | 3471523113503 |
|  |  |
| Dimensions | 77 mm |
| Product Net Depth: | 86 mm |
| Product Net Height: | 0.310 kg |
| Product Net Weight: | 45 mm |
| Product Net Width: |  |

Container Information

| Package Level 1 Width: | 87 mm |
| :--- | :--- |
| Package Level 1 Length: | 79 mm |
| Package Level 1 Height: | 47 mm |
| Package Level 1 Gross Weight: | 0.31 kg |
| Package Level 1 EAN: | 3471523113503 |
| Package Level 2 Units: | 54 piece |
| Package Level 2 Width: | 250 mm |
| Package Level 2 Length: | 300 mm |
| Package Level 2 Height: | 315 mm |
| Package Level 3 Units: | 1229 piece |
| Package Level 1 Units: | 1 piece |

## Technical

| Number of Main Contacts NC: | 0 |
| :---: | :---: |
| Number of Auxiliary Contacts NO: | 1 |
| Number of Auxiliary Contacts NC: | 0 |
| Standards: | IEC 60947-1 / 60947-4-1 and EN 60947-1 / 60947-4-1, UL 508, CSA C22.2 N 14 |
| Rated Operational Voltage: | Auxiliary Circuit 690 V Main Circuit 690 V |
| Rated Frequency (f): | Auxiliary Circuit $50 / 60 \mathrm{~Hz}$ <br> Main Circuit $50 / 60 \mathrm{~Hz}$ |
| Conventional Free-air Thermal Current ( $l_{\text {th }}$ ): | acc. to IEC 60947-4-1, Open Contactors $q=40^{\circ} \mathrm{C} 35 \mathrm{~A}$ acc. to IEC 60947-5-1, $q=40^{\circ} \mathrm{C} 16 \mathrm{~A}$ |
| Rated Operational Current AC-1 ( $\mathrm{l}_{\mathrm{e}}$ ): | $(690 \mathrm{~V}) 40^{\circ} \mathrm{C} 28 \mathrm{~A}$ ( 690 V ) $60^{\circ} \mathrm{C} 28 \mathrm{~A}$ ( 690 V ) $70^{\circ} \mathrm{C} 24 \mathrm{~A}$ |

Rated Operational Current AC-3 (le): $(220 / 230 / 240 \mathrm{~V}) 60^{\circ} \mathrm{C} 12 \mathrm{~A}$

|  | (440 V) $60^{\circ} \mathrm{C} 12 \mathrm{~A}$ ( 500 V ) $60^{\circ} \mathrm{C} 12.5 \mathrm{~A}$ ( 690 V ) $60^{\circ} \mathrm{C} 9 \mathrm{~A}$ |
| :---: | :---: |
| Rated Operational Power AC-3 ( $\mathrm{P}_{\mathrm{e}}$ ): | ( 220 / 230 / 240 V ) 3 kW <br> ( 380 / 400 V ) 5.5 kW <br> ( 400 V ) 5.5 kW <br> ( 415 V ) 5.5 kW <br> (440 V) 5.5 kW <br> ( 500 V ) 7.5 kW <br> ( 690 V ) 7.5 kW |
| Rated Operational Current AC-15 (le): | $\begin{aligned} & (220 / 240 \mathrm{~V}) 4 \mathrm{~A} \\ & (24 / 127 \mathrm{~V}) 6 \mathrm{~A} \\ & (400 / 440 \mathrm{~V}) 3 \mathrm{~A} \\ & (500 \mathrm{~V}) 2 \mathrm{~A} \\ & (690 \mathrm{~V}) 2 \mathrm{~A} \end{aligned}$ |
| Rated Short-time Withstand Current ( $\mathrm{I}_{\mathrm{cw}}$ ): | at $40^{\circ} \mathrm{C}$ Ambient Temp, in Free Air, from a Cold State 10 s 150 A at $40^{\circ} \mathrm{C}$ Ambient Temp, in Free Air, from a Cold State 15 min 35 A at $40^{\circ} \mathrm{C}$ Ambient Temp, in Free Air, from a Cold State 1 min 60 A at $40^{\circ} \mathrm{C}$ Ambient Temp, in Free Air, from a Cold State 1 s 300 A at $40^{\circ} \mathrm{C}$ Ambient Temp, in Free Air, from a Cold State 30 s 80 A for 0.1 s 140 A for 1 s 100 A |
| Maximum Breaking Capacity: | $\cos$ phi $=0.45(\cos$ phi $=0.35$ for le > 100 A$)$ at 440 V 250 A $\cos$ phi $=0.45(\cos$ phi $=0.35$ for le $>100 \mathrm{~A})$ at 690 V 106 A |
| Maximum Electrical Switching Frequency: | AC-1 600 cycles per hour AC-15 1200 cycles per hour AC-2 / AC-4 300 cycles per hour AC-3 1200 cycles per hour DC-13 900 cycles per hour |
| Rated Operational Current DC-13 ( $\mathrm{I}_{\mathrm{e}}$ ): | ( 110 V ) $0.55 \mathrm{~A} / 60 \mathrm{~W}$ ( 125 V ) $0.55 \mathrm{~A} / 69 \mathrm{~W}$ ( 220 V ) $0.27 \mathrm{~A} / 60 \mathrm{~W}$ (24 V) 6 A / 144 W ( 250 V ) $0.27 \mathrm{~A} / 68 \mathrm{~W}$ ( 400 V ) $0.15 \mathrm{~A} / 60 \mathrm{~W}$ (48 V) 2.8 A / 134 W ( 500 V ) $0.13 \mathrm{~A} / 65 \mathrm{~W}$ ( 600 V ) $0.1 \mathrm{~A} / 60 \mathrm{~W}$ (72 V) 1 A / 72 W |
| Rated Insulation Voltage ( $\mathrm{U}_{\mathrm{i}}$ ): | acc. to ULCSA 600 V <br> acc. to IEC 60947-4-1 and VDE 0110 (Gr. C) 690 V |
| Rated Impulse Withstand Voltage ( $\mathrm{U}_{\text {imp }}$ ): | 6 kV |
| Maximum Mechanical Switching Frequency: | 3600 cycles per hour |
| Rated Control Circuit Voltage ( $\mathrm{U}_{\mathrm{c}}$ ): | DC Operation $12 . . .20 \mathrm{~V}$ |
| Operate Time: | Between Coil De-energization and NC Contact Closing 13... 98 ms Between Coil De-energization and NO Contact Opening $11 . . .95 \mathrm{~ms}$ Between Coil Energization and NC Contact Opening 38 ... 90 ms Between Coil Energization and NO Contact Closing $40 \ldots 95 \mathrm{~ms}$ |
| Connecting Capacity Main Circuit: | Flexible with Insulated Ferrule $1 \times 0.75 \ldots . .4 \mathrm{~mm}^{2}$ Flexible with Insulated Ferrule $2 \times 0.75 \ldots . .2 \mathrm{~mm}^{2}$ Flexible with Ferrule $1 / 2 \times 0.75 \ldots 6 \mathrm{~mm}^{2}$ Rigid $1 / 2 \times 1 \ldots 6 \mathrm{~mm}^{2}$ |
| Connecting Capacity Auxiliary Circuit: | Flexible with Ferrule $1 / 2 \times 0.75 \ldots 2.5 \mathrm{~mm}^{2}$ <br> Flexible with Insulated Ferrule $1 \times 0.75 \ldots 2.5 \mathrm{~mm}^{2}$ Flexible with Insulated Ferrule $2 \times 0.75 \ldots 1.5 \mathrm{~mm}^{2}$ Rigid $1 / 2 \times 1 . . .2 .5 \mathrm{~mm}^{2}$ |
| Connecting Capacity Control Circuit: | Flexible with Ferrule $1 / 2 \times 0.75 \ldots 2.5 \mathrm{~mm}^{2}$ <br> Flexible with Insulated Ferrule $1 \times 0.75 \ldots 2.5 \mathrm{~mm}^{2}$ Flexible with Insulated Ferrule $2 \times 0.75 \ldots 1.5 \mathrm{~mm}^{2}$ Rigid $1 / 2 \times 1$... $2.5 \mathrm{~mm}^{2}$ |
| Wire Stripping Length: | Auxiliary Circuit 10 mm Control Circuit 10 mm Main Circuit 10 mm |
| Degree of Protection: | acc. to IEC 60529, IEC 60947-1, EN 60529 Auxiliary Terminals IP20 acc. to IEC 60529, IEC 60947-1, EN 60529 Coil Terminals IP20 acc. to IEC 60529, IEC 60947-1, EN 60529 Main Terminals IP20 |
| Terminal Type: | Screw Terminals |
| Number of Main Contacts NO: | 3 |
| Environmental |  |
| Climatic Withstand: | Category B according to IEC 60947-1 Annex Q |
| Maximum Operating Altitude Permissible: | 3000 m |

Resistance to Vibrations acc. to IEC $5 \ldots 300 \mathrm{~Hz} 4 \mathrm{~g}$ closed position / 2 g open position 60068-2-6:

| Resistance to Shock acc. to IEC 60068-2-27: | Closed, Shock Direction: B1 25 g <br> Open, Shock Direction: B1 5 g <br> Shock Direction: A 30 g <br> Shock Direction: B2 15 g <br> Shock Direction: C1 25 g <br> Shock Direction: C2 25 g |
| :---: | :---: |
| RoHS Status: | Planned to follow EU Directive 2002/95/EC August 18, 2005 and amendment after 2008 Q1 |
| Ambient Air Temperature: | Close to Contactor for Storage $-60 \ldots+80^{\circ} \mathrm{C}$ <br> Close to Contactor Fitted with Thermal O/L Relay $-25 \ldots+60^{\circ} \mathrm{C}$ <br> Close to Contactor without Thermal O/L Relay $-40 \ldots+70^{\circ} \mathrm{C}$ |

Technical ULCSA

| General Use Rating UL/CSA: | $(600 \mathrm{~V} \mathrm{AC}) 28 \mathrm{~A}$ |
| :--- | :--- |
| Horsepower Rating ULCSA: | $(120 \mathrm{~V}$ AC) Single Phase 1 Hp |
|  | $(240 \mathrm{~V}$ AC) Single Phase 2 Hp |
|  | $(200 \ldots 208 \mathrm{~V}$ AC) Three Phase 3 Hp |
|  | $(220 \ldots 240 \mathrm{VAC})$ Three Phase 3 Hp |
|  | $(440 \ldots 480 \mathrm{~V} \mathrm{AC})$ Three Phase $7-1 / 2 \mathrm{Hp}$ |
|  | $(550 \ldots 600 \mathrm{~V} \mathrm{AC})$ Three Phase 10 Hp |
| Tightening Torque ULCSA: | Auxiliary Circuit $11 \mathrm{in} \cdot \mathrm{lb}$ |
|  | Control Circuit $11 \mathrm{in} \cdot \mathrm{lb}$ |
|  | Main Circuit $13 \mathrm{in} \cdot \mathrm{lb}$ |

Certificates and Declarations (Document Number)

| Instructions and Manuals: | 1SBC101027M6801 |
| :--- | :--- |
| ABS Certificate: | ABS_15-GE1349500-PDA_90682247 |
| CB Certificate: | CB_SE_70855M1 |
| CCC Certificate: | CCC_2010010304445624 |
| Data Sheet, Technical Information: | 1SBC101404D0201 |
| Declaration of Conformity -CE: | 1SBD250000U1000 |
| DNV Certificate: | DNV-GL_E13871 |
| EAC Certificate: | EAC_RU C-FR ME77 B01010 |
| GL Certificate: | DNV-GL_E13871 |
| GOST Certificate: | GOST_POCCFR.ME77.B07175.pdf |
| LR Certificate: | LRS_1300087E1 |
| RINA Certificate: | RINA_ELE084013XG |
| RMRS Certificate: | RMRS_1400682124 |
| RoHS Information: | 1SBD251013E1000 |
| UL Certificate: | UL_20140305-E312527_7_1 |
| UL Listing Card: | E312527 |

Classifications

| ETIM 4: | EC000066-Magnet contactor, AC-switching |
| :--- | :--- |
| ETIM 5: | EC000066-Magnet contactor, AC-switching |
| ETIM 6: | EC000066- Power contactor, AC switching |
| UNSPSC: | 39121529 |
| Object Classification Code: | Q |



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