

## PRODUCT-DETAILS

# AF09ZB-22-00-21

## AF09ZB-22-00-21 24-60V50/60HZ 20-60VDC Contactor



### General Information

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extended Product Type | AF09ZB-22-00-21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Product ID            | 1SBL136561R2100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| EAN                   | 3471523124813                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Catalog Description   | AF09ZB-22-00-21 24-60V50/60HZ 20-60VDC Contactor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Long Description      | The AF09ZB-22-00-21 is a 4 pole - 690 V IEC or 600 UL contactor with screw terminals, controlling motors up to 4 kW / 400 V AC (AC-3) and switching power circuits up to 25 A (AC-1) or 25 A UL general use. 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

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

### Popular Downloads

|                          |                 |
|--------------------------|-----------------|
| Instructions and Manuals | 1SBC101037M6801 |
|--------------------------|-----------------|

### Dimensions

|                            |         |
|----------------------------|---------|
| Product Net Width          | 45 mm   |
| Product Net Depth / Length | 77 mm   |
| Product Net Height         | 86 mm   |
| Product Net Weight         | 0.31 kg |

## Technical

|                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of Main Contacts NO                         | 2                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Number of Main Contacts NC                         | 2                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Number of Auxiliary Contacts NO                    | 0                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Number of Auxiliary Contacts NC                    | 0                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Standards                                          | IEC/EN 60947-1, IEC/EN 60947-4-1, UL 60947-4-1, CSA C22.2 No. 60947-4-1, IEC 60077-1 (applicable parts), IEC 60077-2 (applicable parts), EN 50155 (applicable parts), TR CU 001/2011, IEC 61373, For compliance confirmation on applicable parts based on your application and combination, please consult your ABB sales representatives.                                                                                            |
| Rated Operational Voltage                          | Main Circuit 690 V                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Rated Frequency (f)                                | Main Circuit 50 / 60 Hz                                                                                                                                                                                                                                                                                                                                                                                                               |
| Conventional Free-air Thermal Current ( $I_{th}$ ) | acc. to IEC 60947-4-1, Open Contactors $q = 40^\circ\text{C}$ 35 A                                                                                                                                                                                                                                                                                                                                                                    |
| Rated Operational Current AC-1 ( $I_e$ )           | (690 V) $40^\circ\text{C}$ 25<br>(690 V) $60^\circ\text{C}$ 25 A<br>(690 V) $70^\circ\text{C}$ 22                                                                                                                                                                                                                                                                                                                                     |
| Rated Operational Current AC-3 ( $I_e$ )           | (415 V) $60^\circ\text{C}$ 9 A<br>(440 V) $60^\circ\text{C}$ 9 A<br>(500 V) $60^\circ\text{C}$ 9.5 A<br>(690 V) $60^\circ\text{C}$ 7 A<br>(380 / 400 V) $60^\circ\text{C}$ 9 A<br>(220 / 230 / 240 V) $60^\circ\text{C}$ 9 A                                                                                                                                                                                                          |
| Rated Operational Power AC-3 ( $P_e$ )             | (400 V) 4 kW<br>(415 V) 4 kW<br>(440 V) 4 kW<br>(500 V) 5.5 kW<br>(690 V) 5.5 kW<br>(380 / 400 V) 4 kW<br>(220 / 230 / 240 V) 2.2 kW                                                                                                                                                                                                                                                                                                  |
| Rated Short-time Withstand Current ( $I_{cw}$ )    | at $40^\circ\text{C}$ Ambient Temp, in Free Air, from a Cold State 10 s 150 A<br>at $40^\circ\text{C}$ Ambient Temp, in Free Air, from a Cold State 15 min 35 A<br>at $40^\circ\text{C}$ Ambient Temp, in Free Air, from a Cold State 1 min 60 A<br>at $40^\circ\text{C}$ Ambient Temp, in Free Air, from a Cold State 1 s 300 A<br>at $40^\circ\text{C}$ Ambient Temp, in Free Air, from a Cold State 30 s 80 A<br>for 1 s -empty- A |
| Maximum Breaking Capacity                          | $\cos \phi = 0.45$ ( $\cos \phi = 0.35$ for $I_e > 100$ A) at 440 V 250 A<br>$\cos \phi = 0.45$ ( $\cos \phi = 0.35$ for $I_e > 100$ A) at 690 V 106 A                                                                                                                                                                                                                                                                                |
| Maximum Electrical Switching Frequency             | (AC-1) 600 cycles per hour                                                                                                                                                                                                                                                                                                                                                                                                            |
| Rated Insulation Voltage ( $U_i$ )                 | acc. to IEC 60947-4-1 and VDE 0110 (Gr. C) 690 V                                                                                                                                                                                                                                                                                                                                                                                      |
| Rated Impulse Withstand Voltage ( $U_{imp}$ )      | 6 kV                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Maximum Mechanical Switching Frequency             | 3600 cycles per hour                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Rated Control Circuit Voltage ( $U_c$ )            | 50 Hz 24 ... 60 V<br>60 Hz 24 ... 60 V<br>DC Operation 20 ... 60 V                                                                                                                                                                                                                                                                                                                                                                    |
| Operate Time                                       | Between Coil De-energization and NC Contact Closing 13 ... 98 ms<br>Between Coil De-energization and NO Contact Opening 11 ... 95 ms<br>Between Coil Energization and NC Contact Opening 38 ... 90 ms<br>Between Coil Energization and NO Contact Closing 40 ... 95 ms                                                                                                                                                                |

|                                        |                                                                                                                                                                                                                                       |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connecting Capacity<br>Main Circuit    | Flexible with Ferrule 1/2x 0.75 ... 6 mm <sup>2</sup><br>Flexible with Insulated Ferrule 1x 0.75 ... 4 mm <sup>2</sup><br>Flexible with Insulated Ferrule 2x 0.75 ... 2.5 mm <sup>2</sup><br>Rigid 1/2x 1 ... 6 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                  | Control Circuit 10 mm<br>Main Circuit 10 mm                                                                                                                                                                                           |
| 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 IP20                                                                                                          |
| Terminal Type                          | Screw Terminals                                                                                                                                                                                                                       |

## Technical UL/CSA

|                              |                 |
|------------------------------|-----------------|
| General Use Rating<br>UL/CSA | (600 V AC) 25 A |
|------------------------------|-----------------|

## Environmental

|                                           |                                                                                                          |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Ambient Air<br>Temperature                | Close to Contactor for Storage -60 ... +80 °C<br>Near Contactor for Operation in Free Air -40 ... +70 °C |
| Climatic Withstand                        | Category B according to IEC 60947-1 Annex Q                                                              |
| Maximum Operating<br>Altitude Permissible | 3000 m                                                                                                   |
| RoHS Status                               | Following EU Directive 2011/65/EU                                                                        |

## Certificates and Declarations (Document Number)

|                                    |                             |
|------------------------------------|-----------------------------|
| CB Certificate                     | CB_SE-96551                 |
| CCC Certificate                    | CCC_2010010304445624        |
| CQC Certificate                    | CQC2010010304445624         |
| Declaration of<br>Conformity - CCC | 2020980304001253            |
| Declaration of<br>Conformity - CE  | 1SBD250001U1000             |
| EAC Certificate                    | EAC_RU C-FR ME77 B03597     |
| Environmental<br>Information       | 1SBD250167E1000             |
| GOST Certificate                   | GOST_POCCFR.ME77.B07175.pdf |
| Instructions and<br>Manuals        | 1SBC101037M6801             |
| KC Certificate                     | KC_HW02016-15007C           |
| RoHS Information                   | 1SBD250001U1000             |
| UL Certificate                     | UL_20120918-E319322-3-1     |
| UL Listing Card                    | UL_E319322                  |

## Container Information

|                                   |               |
|-----------------------------------|---------------|
| Package Level 1 Units             | box 1 piece   |
| Package Level 1 Width             | 87 mm         |
| Package Level 1 Depth /<br>Length | 79 mm         |
| Package Level 1 Height            | 47 mm         |
| Package Level 1 Gross<br>Weight   | 0.31 kg       |
| Package Level 1 EAN               | 3471523124813 |
| Package Level 2 Units             | box 27 piece  |

|                                |            |
|--------------------------------|------------|
| Package Level 2 Width          | 250 mm     |
| Package Level 2 Depth / Length | 300 mm     |
| Package Level 2 Height         | 315 mm     |
| Package Level 2 Gross Weight   | 16.74 kg   |
| Package Level 3 Units          | 1296 piece |

Classifications

|                            |                                           |
|----------------------------|-------------------------------------------|
| Object Classification 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  |
| eClass                     | V11.0 : 27371003                          |
| UNSPSC                     | 39121529                                  |

Categories

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

