PRODUCT-DETAILS

# NFZB31E-22

## NFZB31E-22 48-130V50/60HZ-DC Contactor Relay



### General Information

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|---|---|
| Extended Product Type | NFZB31E-22 |
| Product ID | 1SBH136061R2231 |
| EAN | 3471523105621 |
| Catalog Description | NFZB31E-22 48-130V50/60HZ-DC Contactor Relay |
| Long Description | The NFZB31E-22 is a contactor relay complying with the latest railway rolling stock standards and allowing installation in passengers or driver cabins for trains frequently operating tunnels or undergrounds. It is used for switching auxiliary and control circuits. These contactor relays:<br>• include screw terminals for connection with standard ferrules for a safe insertion and wiring of cables.<br>• improve the compactness of the installations thanks to reduced dimension and side-by-side mounting requiring less 15% width (without spacing) from -40 °C up to +70 °C<br>• meet all main general and rolling stocks standards: IEC 60947-5-1 and the applicable parts of IEC 60077-1/-2 and EN 50155 standards, shocks and vibration withstand conforming to IEC 61373 cat. 1, class B<br>• get an electronic coil interface accepting a wide DC control voltage range including the main control supplies e.g. Uc = 72, 96, 110 V DC, as per defined by IEC 60077 (0.7 ... 1.25 Uc operating limits for battery supply)<br>• reach the highest levels in fire and smoke behaviour with compliance to European standard EN 45545-2 (HL2, HL3 hazard levels) in group mounting<br>• reduce train energy with lighter devices and requiring 68% less coil energy consumption in operation<br>• get an electronic coil interface accepting sinusoïdal AC 50/60 Hz control supplies included inside Ucmin.... Ucmax voltage range. Max permitted AC 50/60 Hz control voltage must not be exceeded (see technical data)<br>• include mechanically-linked auxiliary contacts compliant with Annex L of IEC 60947-5-1 and are side-marked with the "Mechanically Linked" symbol<br>• include a wide range of auxiliary contact blocks for front and side mounting. |

## Ordering

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

## Popular Downloads

| | |
|---|---|
| Data Sheet, Technical Information | 1SBC100220C0201 |
| Instructions and Manuals | 1SBC101027M6801 |
| CAD Dimensional Drawing | 2CDC001079B0201 |

## Dimensions

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

## Technical

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| Number of Auxiliary Contacts NO | 3 |
| Number of Auxiliary Contacts NC | 1 |
| Standards | IEC/EN 60947-1, IEC/EN 60947-5-1, UL 60947-5-1, CSA C22.2 No. 60947-5-1, IEC 60077-1 (applicable parts), IEC 60077-2 (applicable parts), EN 50155 |

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| | (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 | Auxiliary Circuit 690 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 ($I_{th}$) | acc. to IEC 60947-5-1, Θ = 40 °C 16 A |
| Rated Operational Current AC-15 ($I_e$) | (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 Withstand Current Low Voltage ($I_{cw}$) | for 0.1 s 140 A<br>for 1 s 100 A |
| Maximum Electrical Switching Frequency | (AC-15) 1200 cycles per hour<br>(DC-13) 900 cycles per hour |
| Rated Operational Current DC-13 ($I_e$) | (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 ($U_i$) | acc. to IEC 60947-5-1 690 V<br>acc. to UL/CSA 600 V |
| Rated Impulse Withstand Voltage ($U_{imp}$) | 6 kV |
| Maximum Mechanical Switching Frequency | 6000 cycles per hour |
| Rated Control Circuit Voltage ($U_c$) | 50 Hz 48 ... 130 V<br>60 Hz 48 ... 130 V<br>DC Operation 48 ... 130 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 |
| Mounting on DIN Rail | TH35-15 (35 x 15 mm Mounting Rail) acc. to IEC 60715<br>TH35-7.5 (35 x 7.5 mm Mounting Rail) acc. to IEC 60715 |
| Mounting by Screws (not supplied) | 2 x M4 screws placed diagonally |
| Connecting Capacity Auxiliary Circuit | Flexible with Ferrule 1/2x 0.75 ... 2.5 mm²<br>Flexible with Insulated Ferrule 1x 0.75 ... 2.5 mm²<br>Flexible with Insulated Ferrule 2x 0.75 ... 1.5 mm²<br>Rigid Solid 1/2x 1 ... 2.5 mm²<br>Rigid Stranded 1/2x 1 ... 2.5 mm² |
| Connecting Capacity Control Circuit | Flexible with Ferrule 1/2x 0.75 ... 2.5 mm²<br>Flexible with Insulated Ferrule 1x 0.75 ... 2.5 mm²<br>Flexible with Insulated Ferrule 2x 0.75 ... 1.5 mm²<br>Rigid Solid 1/2x 1 ... 2.5 mm²<br>Rigid Stranded 1/2x 1 ... 2.5 mm² |
| Wire Stripping Length | Control Circuit 10 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 |
| Terminal Type | Screw Terminals |

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## Technical UL/CSA

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|---|---|
| Connecting Capacity Auxiliary Circuit UL/CSA | Rigid Solid 1/2x 18-14 AWG<br>Rigid Stranded 1/2x 18-14 AWG |
| Tightening Torque UL/CSA | Auxiliary Circuit 11 in·lb<br>Control Circuit 11 in·lb |

## Environmental

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| Ambient Air 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 Altitude Permissible | Without Derating 3000 m |

## Material Compliance

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|---|---|
| Conflict Minerals Reporting Template (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 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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|---|---|
| Environmental Product Declaration - EPD | 1SBD250584E3000 |

## Certificates and Declarations

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|---|---|
| CB Certificate | CB_SE-93051M2 |
| CCC Certificate | CCC_2011010303465426 |
| CQC Certificate | CQC2019010303267993 |
| Declaration of Conformity - CCC | 2020980303000175 |
| Declaration of Conformity - CE | 1SBD250006U1000 |
| Declaration of Conformity - UKCA | 1SBD250037U1000 |
| EAC Certificate | EAC_RU C-FR ME77 B01006 |
| GOST Certificate | GOST_POCCFR.ME77.B07174.pdf |
| RMRS Certificate | RMRS_1802702280 |
| UL Certificate | UL_20180227_E252354_2_1 |
| UL Listing Card | UL_E252354 |

## Container Information

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| Package Level 1 Units | box 1 piece |
| Package Level 1 Width | 87 mm |

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| Package Level 1 Depth / Length | 79 mm |
| Package Level 1 Height | 47 mm |
| Package Level 1 Gross Weight | 0.31 kg |
| Package Level 1 EAN | 3471523105621 |
| 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

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| Object Classification Code | K |
| ETIM 7 | EC000196 - Contactor relay |
| ETIM 8 | EC000196 - Contactor relay |
| ETIM 9 | EC000196 - Contactor relay |
| eClass | V11.0 : 27371001 |
| UNSPSC | 39121529 |
| IDEA Granular Category Code (IGCC) | 4763 >> Power contactor, DC switching |

## Categories

Low Voltage Products and Systems → Control Products → Contactors → Block Contactors → NF Contactor Relays



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