DATASHEET - NZMN3-AE630-AVE



Circuit-breaker, 3p, 630A, withdrawable unit



NZMN3-AE630-AVE 110842



Delivery program

| Product range | | | Circuit-breaker |
|---|-----------------------------------|----|---|
| Protective function | | | System and cable protection |
| Standard/Approval | | | IEC |
| Installation type | | | Withdrawable |
| Release system | | | Electronic release |
| Construction size | | | NZM3 |
| Description | | | R.m.s. value measurement and "thermal memory" |
| Number of poles | | | 3 pole |
| Standard equipment | | | Screw connection |
| Switching capacity | | | |
| 400/415 V 50 Hz | l _{cu} | kA | 50 |
| Rated current = rated uninterrupted current | | | |
| Rated current = rated uninterrupted current | $I_n = I_u$ | А | 630 |
| Setting range | | | |
| Overload trip | | | |
| с‡ | l _r | A | 315 - 630 |
| Short-circuit releases | | | |
| Non-delayed | I _i = I _n x | | 2 - 8 |

Technical data

| General | | |
|---|------|---|
| Standards | | IEC/EN 60947 |
| Protection against direct contact | | Finger and back of hand proof to VDE 0106 Part 100 |
| Climatic proofing | | Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30 |
| Ambient temperature | | |
| Ambient temperature, storage | °C | - 40 - + 70 |
| Operation | °C | -25 - +70 |
| Mechanical shock resistance (10 ms half-sinusoidal shock) according to IEC 60068-2-27 | g | 20 (half-sinusoidal shock 20 ms) |
| Safe isolation to EN 61140 | | |
| Between auxiliary contacts and main contacts | V AC | 500 |
| between the auxiliary contacts | V AC | 300 |
| Weight | kg | 6.34 |
| Mounting position | | Vertical and 90° in all directions With XFI earth-fault release: - NZM1, N1, NZM2, N2: vertical and 90° in all directions with plug-in unit - NZM1, N1, NZM2, N2: vertical, 90° right/left with withdrawable unit: |

with withdrawable unit: - NZM3, N3: vertical, 90° right/left

- NZM4, N4: vertical

| Direction of incoming supply as required Degree of protection In the operating controls area: IP20 (basic degree of protection) Device In the operating controls area: IP20 (basic degree of protection) Enclosures With insulating surround: IP40 With door coupling rotary handle: IP66 | |
|--|-------------|
| Device In the operating controls area: IP20 (basic degree of p Enclosures With insulating surround: IP40 | |
| Enclosures With insulating surround: IP40 | |
| | protection) |
| With door counling rotary handle: IP66 | |
| | |
| Terminations Tunnel terminal: IP10 Phase isolator and strip terminal: IP00 | |
| Other technical data (sheet catalogue) Temperature dependency, Derating Circuit-breakers | |
| Rated current = rated uninterrupted current $I_n = I_u$ A 630 | |
| Rated surge voltage invariability U _{imp} | |
| Main contacts V 8000 | |
| Auxiliary contacts V 6000 | |
| Rated operational voltage Ue VAC 690 | |
| Overvoltage category/pollution degree III/3 | |
| Rated insulation voltage Ui V 1000 | |
| Use in unearthed supply systems V ≤ 690 | |
| Switching capacity | |
| Rated short-circuit making capacity I _{cm} | |
| 240 V I _{cm} kA 187 | |
| 400/415 V I _{cm} kA 105 | |
| 440 V 50/60 Hz I _{cm} kA 74 | |
| 525 V 50/60 Hz I _{cm} kA 53 | |
| 690 V 50/60 H IC KA 40 | |
| Rated short-circuit breaking capacity I _{cn} I _{cn} | |
| Icu to IEC/EN 60947 test cycle 0-t-C0 | |
| 240 V 50/60 Hz I cu kA 85 | |
| 400/415 V 50/60 Hz I _{cu} kA 50 | |
| 440 V 50/60 Hz I _{cu} kA 35 | |
| 525 V 50/60 Hz I _{cu} kA 25 | |
| | |
| | |
| Ics to IEC/EN 60947 test cycle 0-t-C0-t-C0 Ics kA 240 V 50/60 Hz Ics kA 85 | |
| | |
| 400/415 V 50/60 Hz I _{cs} kA 50 | |
| 440 V 50/60 Hz I _{cs} kA 35 | |
| 525 V 50/60 Hz I _{cs} kA 13 | |
| 690 V 50/60 Hz Ics KA 5 Maximum back-up fuse, if the expected short-circuit of location exceed the switching capacity of the circuit- | |
| Rated short-time withstand current | |
| t = 0.3 s I _{cw} kA 3.3 | |
| t = 1 s I _{CW} kA 3.3 | |
| Utilization category to IEC/EN 60947-2 | |
| Lifespan, mechanical(of which max. 50 % trip by shunt/undervoltage release) Operations 15000 | |
| Lifespan, electrical | |
| AC-1 | |
| 400 V 50/60 Hz Operations 5000 | |
| 415 V 50/60 Hz Operations 5000 | |
| 690 V 50/60 Hz Operations 3000 | |
| AC3 | |
| 400 V 50/60 Hz Operations 2000 | |
| 415 V 50/60 Hz Operations 2000 | |

| Nate specing frequencyOptionOptionOptionRead loss shift-iquein<0Read constantin<0Read sequencitsinSeries statusciantRead sequencitsininRead sequencitsininSet sequencits <td< th=""><th>690 V 50/60 Hz</th><th>Operations</th><th></th><th>2000</th></td<> | 690 V 50/60 Hz | Operations | | 2000 |
|---|---|------------|-----------------|--|
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| AccessiveImage: second constructionImage: second constructionImage: second constructionImage: second constructionImage: second constructionSoldImage: second constructionImage: second constructionImage: second constructionImage: second constructionImage: second constructionImage: seco | | | | |
| picket servicespicket servicespicket servicesRoter opper contoorImage: servicesImage: servicesRoter opper contoorImage: servicesImage: servicesSoldImage: services< | | | | Screw connection |
| Roid coper anducor Roid coper anducor Roid coper anducor Roid coper anducor Back terminal Sea Se | Accessories required | | | NZM3-XAVS |
| BoxMarkMar | Optional accessories | | | Tunnel terminal |
| Solid2 × 16Standedx x 35 × 301Tunnel terminalx x 35 × 301Solidx x x 3Solidx x x x x x x x x x x x x x x x x x x | Round copper conductor | | | |
| Sranded Image: Standed in the state of the | Box terminal | | | |
| Image and the second of the | Solid | | mm ² | 2 x 16 |
| SididImage: state state connectionImage: state state connectionImage: state connectionImage: state connectionBotterminal and rear state connectionImage: state connectionImage: state connectionImage: state connectionBotter state connectionImage: state connectionImage: state connectionImage: state connectionSolidImage: state connectionImage: state connectionImage: state connectionConnection width extensionImage: state connectionImage: state connectionA connection width extensionImage: state connectionImage: state connectionConnection width extensionImage: state connectionImage: state connectionSolidImage: state connectionImage: state connectionSol | | | mm ² | |
| Sranded Image: set of the | | | | |
| IndeImage: Barbar and service on the switchImage: Barbar and service on the switchImage: Barbar and service on the switchDirect on the switchImage: Barbar and service on the switchImage: Barbar and service on the switchImage: Barbar and service on the switchStandedImage: Barbar and service on the switch on | Solid | | mm ² | 1 x 16 |
| Botterminia and rae-side connection Image: side connection Direct on the writch Image: side connection Strandad Image: side connection Strandad Image: side connection Connection with extension Image: side connection Acticular conductor Image: side connection Tomol terminial Image: side connection Strandad Image: side connection | Stranded | | | |
| Diecton tessichImageImageImageImageStandedImageImageImageStandedImageImageImageConnection with extensionImageImageImageActicular conductorImageImageImageStandedImageImageImageStandedImageImageImageStandedImageImageImageDueb holeImageImageImageDueb holeImageImageImageStandedImageImageImageStandedImageImageImageDueb holeImageImageImageImageImageImageImageStandedImage <t< td=""><td>1-hole</td><td></td><td>mm²</td><td>1 x (16 - 185)</td></t<> | 1-hole | | mm ² | 1 x (16 - 185) |
| SlidnnnnnnnnSrandadnn< | Bolt terminal and rear-side connection | | | |
| Image: Part of the section with extensionImage: Part of the section wit | Direct on the switch | | | |
| intermineintermineintermineintermineintermineConnection width extensionIntermineIntermineintermineA larcada conductorIntermineIntermineIntermineTunnel errimineIntermineIntermineIntermineStrandedIntermineIntermineIntermineStrandedIntermineIntermineIntermineDouble holeIntermineIntermineIntermineDouble holeIntermineIntermineIntermineD | Solid | | mm ² | |
| Connection width extension Image: standing s | | | | |
| Aircular conductor Main Aircular conductor Main Tunnel terminal Main Solid Main Stranded Main Stranded Main Stranded Main Double hole Main Double hole Main Stranded Main Stranded Main Stranded Main Boxterminal Main Stranded Main Flat copper strip, with holes Main Flat copper strip, with holes Main Flat copper strip, with holes Main Screw connection Screw connection Screw connection Screw connection Screw connecti | Connection width extension | | mm ² | |
| Tunel terminalImage: set of the set of th | Connection width extension | | mm ² | 2 x 300 |
| Solid I I I Standed I I I Standed I I I I Duble hole I | Al circular conductor | | | |
| Stranded max max Stranded max 1x (25-185) ²) Double hole max 1x (25-185) ²) Double hole max 1x (25-185) ²) Double hole max 1x (25-185) ²) Cu strip (number of segments x width x segment thickness) p ¹ Up to 240 mm ² car be connected depending on the cable manufacturer. Box terminal min. max Sta 5x 3X 10 Cu strip (number of segments x width x segment thickness) min. max Sta 5x 3X 10 Box terminal min. max Sta 5x 3X 10 Sta 5x 3X 10 Flat copper strip, with holes min. max Sta 5x 3X 10 Sta 5x 3X 10 Gonnection width extension max max Sta 5x 10. Sta 5x 10. Screw connection max max Sta 5x 10. Sta 5x 10. Direct on the switch max max max max max Nore connection max max max max max Screw connection max max max max max max Nore Screw connection max | Tunnel terminal | | | |
| Stranded nm ² 1x(52 183) ²) Double hole nm ² 1x(50 - 240) Double hole ² Up to 240 mm ² can be connected depending on the cable manufacturer. Strip (number of segments x width x segment thickness) | Solid | | mm ² | 1 x 16 |
| Dubble hole nm² 1x (50 - 240) 2x (50 - 240) Cu strip (number of segments xwidth x segment thickness) P P Box terminal nm 6x 16x 0.8 Cu strip (number of segments xwidth x segment thickness) nm 6x 16x 0.8 Box terminal nm 6x 16x 0.8 Cu strip (number of segments xwidth x segment thickness) nm 6x 16x 0.8 Box terminal nm 6x 16x 0.8 Flat copper strip, with holes nm 6x 16x 0.8 Flat copper strip, with holes nm 1x 22x 1.0 + 5x 32x 1.0 Connection width extension nm 1x 22x 1.0 + 5x 32x 1.0 Copper busbar (width xthickness) nm 1x 22x 1.0 + 5x 32x 1.0 Bott terminal and rear-side connection nm 1x 22x 1.0 + 5x 32x 1.0 Copper busbar (width xthickness) nm 1x 2x 1.0 + 5x 32x 1.0 Bott terminal and rear-side connection nm 1x 10 + 5x 10 + | Stranded | | | |
| kmm 2 x (50 - 240) 2 x (50 - 240) 2 y (bo 240 mm² can be connected depending on the cable manufacturer. 2 u tor store minal 2 y (bo 240 mm² can be connected depending on the cable manufacturer. Box terminal mm. mm 6 x 16 x 0.8 I was terminal and rear-side connection mm. mm 6 x 16 x 0.8 Bot terminal and rear-side connection mm. mm 6 x 16 x 0.8 Flat copper strip, with holes mm. mm 6 x 16 x 0.8 Connection width extension mm. mm 6 x 16 x 0.8 Copper bushar (width x thickness) mm. mm 6 x 16 x 0.8 Bot terminal and rear-side connection mm 0 x 32 x 1.0 + 5 x 32 x 1.0 Copper bushar (width x thickness) mm 0 x 32 x 1.0 + 5 x 32 x 1.0 Bot terminal and rear-side connection mm 0 x 32 x 1.0 + 5 x 32 x 1.0 Screw connection mm 0 x 10 x 5 5 mm Direct on the switch mm 0 x 5 5 I function width extension mm 0 x 5 5 I function width extension mm 0 x 5 5 I function the switch mm 0 x 5 5 I function the switch mm 0 x 5 5 I function the switch mm 0 x 5 5 I function the switch< | Stranded | | mm ² | 1 x (25 - 185) ²⁾ |
| Cu strip (number of segments x width x segment thickness) Image: Provide the segment thickness) Image: Provide the segment thickness) Box terminal min. mm Sx 16 x 0.8 Image: Provide the segment thickness) max. mm Dx 24 x 1.0 the segment the segment thickness) Bolt terminal and rear-side connection min. mm St 16 x 0.8 Flat copper strip, with holes min. mm St 16 x 0.8 Connection width extension mm St 16 x 0.8 Copper busbar (width x thickness) mm St 16 x 0.8 Bolt terminal and rear-side connection mm St 10 x 32 x 1.0 t 5 x 32 x 1.0 Copper busbar (width x thickness) mm St 10 x 32 x 1.0 t 5 x 32 x 1.0 Bolt terminal and rear-side connection mm St 10 x 50 x 1.0 Screw connection mm Mm Mm Direct on the switch mm St 5 Image: Provide the set sion mm St | Double hole | | mm ² | 1 x (50 - 240) 2 x (50 - 240) |
| Box terminal Imm Imm 6 × 16 × 0.8 min. max. mm 10× 24 × 1.0 5 × 24 × 1.0 (2 ×) 8 × 24 × 1.0 (2 ×) 8 × 24 × 1.0 (2 ×) 8 × 24 × 1.0 Bolt terminal and rear-side connection min. mm 6 × 16 × 0.8 Flat copper strip, with holes min. mm 6 × 16 × 0.8 Flat copper strip, with holes min. mm 6 × 16 × 0.8 Connection width extension max. mm 6 × 16 × 0.8 Copper busbar (width x thickness) max. mm 10 × 32 × 1.0 + 5 × 32 × 1.0 Bolt terminal and rear-side connection mm (2 × 10 × 50 × 1.0 Copper busbar (width x thickness) mm (2 × 10 × 50 × 1.0 Bolt terminal and rear-side connection mm (2 × 10 × 50 × 1.0 Screw connection mm (2 × 10 × 50 × 1.0 Direct on the switch mm (2 × 10 × 50 × 1.0 Direct on the switch mm (2 × 10 × 50 × 1.0 Image: I | | | | $^{\rm 2)}$ Up to 240 $\rm mm^2$ can be connected depending on the cable manufacturer. |
| init min. | Cu strip (number of segments x width x segment thickness) | | | |
| Image: space of the system of the s | Box terminal | | | |
| Image: Single | | min. | mm | 6 x 16 x 0.8 |
| Flat copper strip, with holes min. mm 6x 16x 0.8 Flat copper strip, with holes max. mm 10x 32x 1.0 + 5x 32x 1.0 Connection width extension mm (2x) 10x 50x 1.0 Copper busbar (width x thickness) mm | | max. | mm | + 5 x 24 x 1.0 |
| Flat copper strip, with holes max. mm 10×32×1.0+5×32×1.0 Connection width extension mm (2×) 10×50×1.0 Copper busbar (width x thickness) mm (2×) 10×50×1.0 Bolt terminal and rear-side connection mm Mm Screw connection mm MI0 Direct on the switch min. mm Mm Image: Strew connection mm Screw connection MI0 Image: Strew connection mm Screw connection Screw connection Image: Strew connection mm Screw connection MI0 Image: Strew connection mm Screw connection Screw connection Image: Strew connection min. mm Screw connection Image: Strew connection mm Screw connection Screw connection Image: Strew connection Image: Strew connection Screw connection Screw connection Image: Strew connection | Bolt terminal and rear-side connection | | | |
| Connection width extension mm (2x) 10 x 50 x 1.0 Copper busbar (width x thickness) mm MM Bolt terminal and rear-side connection MM MIO Screw connection MM MIO Direct on the switch MM Socrew connection Min. Mm Socrew connection Min. Mm Socrew connection Direct on the switch MM Socrew connection Min. Mm Socrew connection | Flat copper strip, with holes | min. | mm | 6 x 16 x 0.8 |
| Copper busbar (width x thickness) mm Bolt terminal and rear-side connection MM Screw connection MI0 Direct on the switch mm Imax mm Sorrege Sorrege Connection width extension mm | Flat copper strip, with holes | max. | mm | 10 x 32 x 1.0 + 5 x 32 x 1.0 |
| Bolt terminal and rear-side connection Image: Screw connection Image: Screw connection Screw connection Image: Screw connection M10 Direct on the switch Image: Screw connection Image: Screw connection Image: Screw connection Image: Screw connection Image: Screw connection Image: Screw connection Image: Screw connection Image: Screw connection Image: Screw connection width extension Image: Screw connection Image: Screw connection | Connection width extension | | mm | (2 x) 10 x 50 x 1.0 |
| Screw connection MD Direct on the switch min. mm 0 max. mm Connection width extension mm 30 x 10 +30 x 5 | Copper busbar (width x thickness) | mm | | |
| Direct on the switch Image: Second | Bolt terminal and rear-side connection | | | |
| min. mm 20 x 5 max. mm 30 x 10 + 30 x 5 Connection width extension mm | Screw connection | | | M10 |
| max. mm $30 \times 10 + 30 \times 5$ Connection width extension mm | Direct on the switch | | | |
| Connection width extension mm | | min. | mm | 20 x 5 |
| | | max. | mm | |
| | | | mm | |
| Connection width extension max. mm 2 x (10 x 50) | | max. | mm | 2 x (10 x 50) |
| Control cables | Control cables | | | |
| mm ² 1 × (0.75 - 2.5) 2 × (0.75 - 1.5) | | | mm ² | |

| Design verification as per IEC/EN 61439 | | | |
|--|------------------|----|--|
| Technical data for design verification | | | |
| Rated operational current for specified heat dissipation | I _n | А | 630 |
| Equipment heat dissipation, current-dependent | P _{vid} | W | 119.07 |
| Operating ambient temperature min. | | °C | -25 |
| Operating ambient temperature max. | | °C | 70 |
| IEC/EN 61439 design verification | | | |
| 10.2 Strength of materials and parts | | | |
| 10.2.2 Corrosion resistance | | | Meets the product standard's requirements. |
| 10.2.3.1 Verification of thermal stability of enclosures | | | Meets the product standard's requirements. |
| 10.2.3.2 Verification of resistance of insulating materials to normal heat | | | Meets the product standard's requirements. |
| 10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects | | | Meets the product standard's requirements. |
| 10.2.4 Resistance to ultra-violet (UV) radiation | | | Meets the product standard's requirements. |
| 10.2.5 Lifting | | | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.2.6 Mechanical impact | | | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.2.7 Inscriptions | | | Meets the product standard's requirements. |
| 10.3 Degree of protection of ASSEMBLIES | | | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.4 Clearances and creepage distances | | | Meets the product standard's requirements. |
| 10.5 Protection against electric shock | | | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.6 Incorporation of switching devices and components | | | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.7 Internal electrical circuits and connections | | | Is the panel builder's responsibility. |
| 10.8 Connections for external conductors | | | Is the panel builder's responsibility. |
| 10.9 Insulation properties | | | |
| 10.9.2 Power-frequency electric strength | | | Is the panel builder's responsibility. |
| 10.9.3 Impulse withstand voltage | | | Is the panel builder's responsibility. |
| 10.9.4 Testing of enclosures made of insulating material | | | Is the panel builder's responsibility. |
| 10.10 Temperature rise | | | The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices. |
| 10.11 Short-circuit rating | | | Is the panel builder's responsibility. The specifications for the switchgear must be observed. |
| 10.12 Electromagnetic compatibility | | | Is the panel builder's responsibility. The specifications for the switchgear must be observed. |
| 10.13 Mechanical function | | | The device meets the requirements, provided the information in the instruction leaflet (IL) is observed. |

Technical data ETIM 7.0

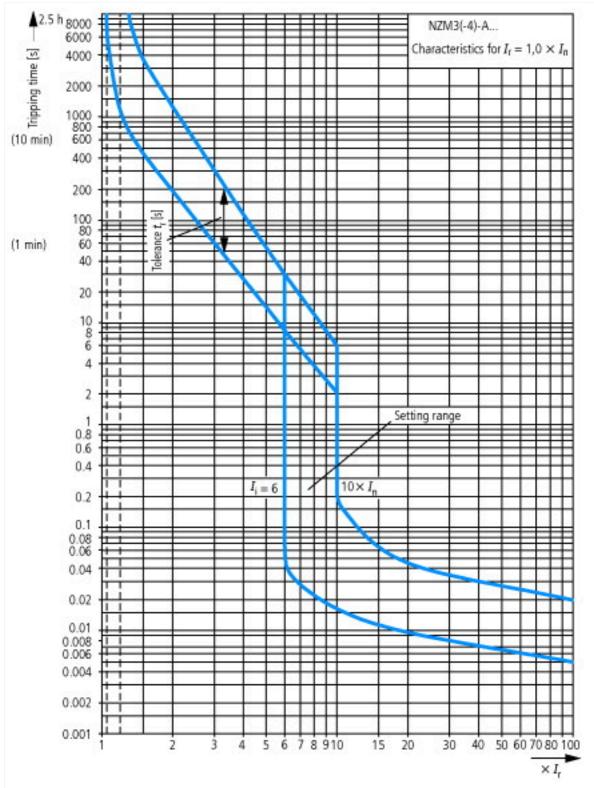
Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation protection (EC000228)

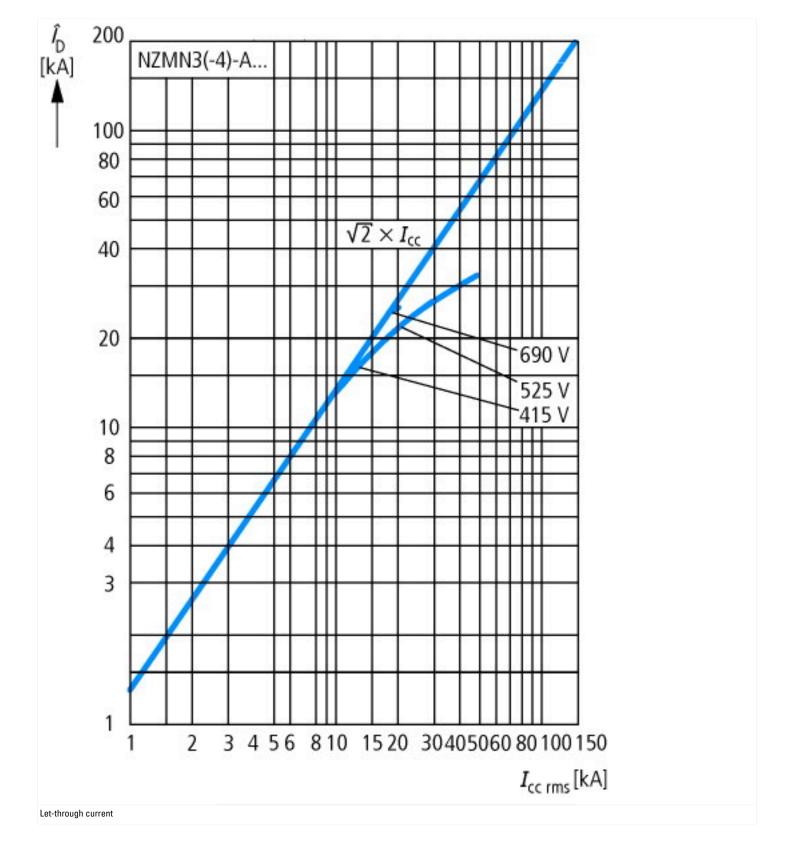
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (ecl@ss10.0.1-27-37-04-09 [AJZ716013])

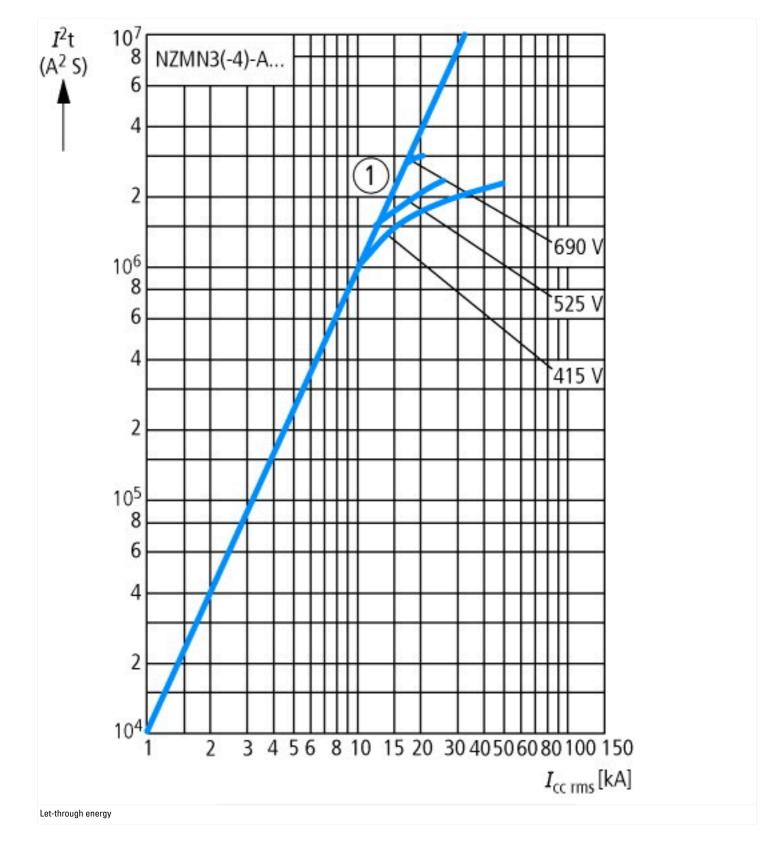
| Rated permanent current lu | А | 630 |
|---|----|---|
| Rated voltage | V | 690 - 690 |
| Rated short-circuit breaking capacity Icu at 400 V, 50 Hz | kA | 50 |
| Overload release current setting | А | 315 - 630 |
| Adjustment range short-term delayed short-circuit release | А | 0 - 0 |
| Adjustment range undelayed short-circuit release | А | 1260 - 5040 |
| Integrated earth fault protection | | No |
| Type of electrical connection of main circuit | | Screw connection |
| Device construction | | Built-in device slide-in technique (withdrawable) |
| Suitable for DIN rail (top hat rail) mounting | | No |
| DIN rail (top hat rail) mounting optional | | No |
| Number of auxiliary contacts as normally closed contact | | 0 |
| Number of auxiliary contacts as normally open contact | | 0 |
| Number of auxiliary contacts as change-over contact | | 0 |
| With switched-off indicator | | No |
| With under voltage release | | No |
| Number of poles | | 3 |
| | | |

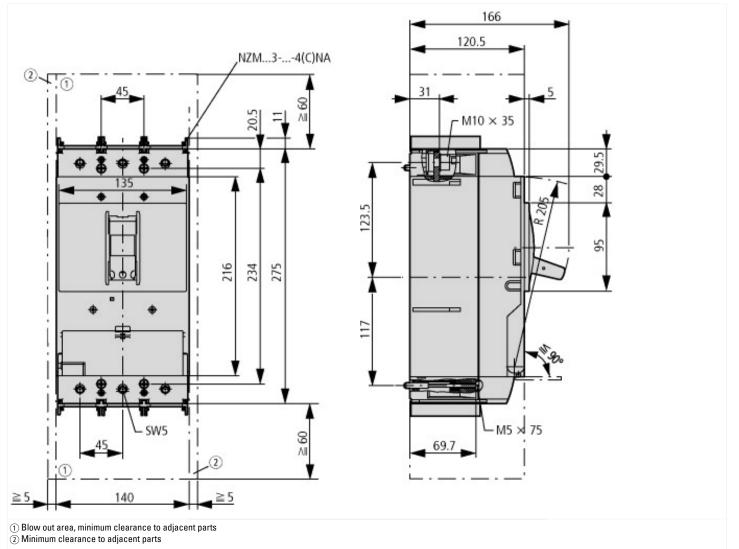
| Position of connection for main current circuit | Front side |
|---|--------------|
| Type of control element | Rocker lever |
| Complete device with protection unit | Yes |
| Motor drive integrated | No |
| Motor drive optional | Yes |
| Degree of protection (IP) | IP20 |

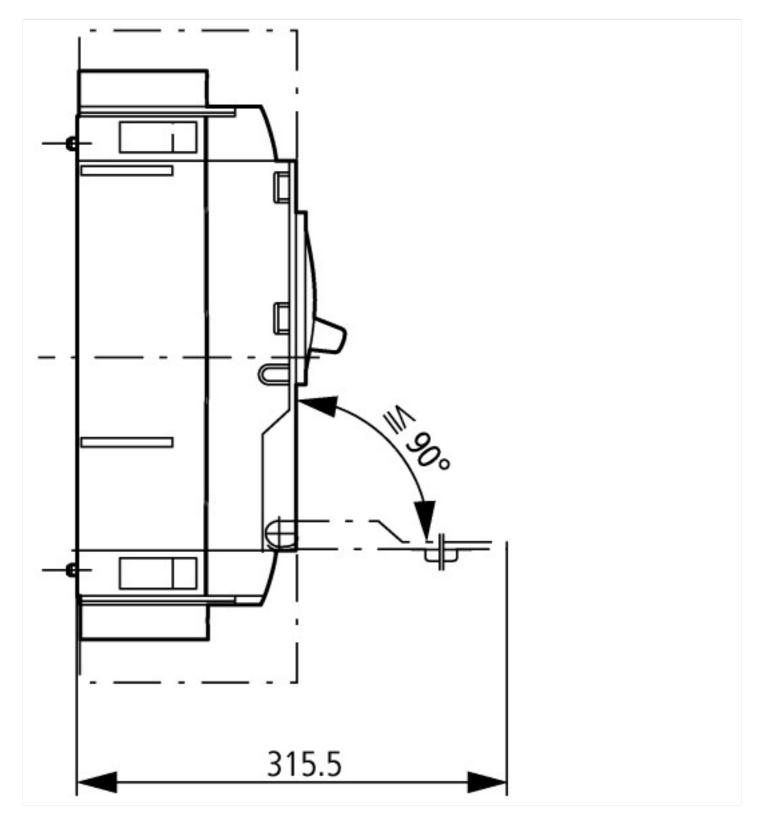
Characteristics











Additional product information (links)

| Temperature dependency, Derating | http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=17.172 |
|---|--|
| CurveSelect characteristics program | http://www.eaton.eu/DE/Europe/Electrical/CustomerSupport/ConfigurationTools/CharacteristicsProgram/ index.htm |
| additional technical information for NZM power switch | ftp://ftp.moeller.net/DOCUMENTATION/PDF/nzm_technic_de_en.pdf |