





NZMH2-A100-S1



Overview



Specifications



Resources







DELIVERY PROGRAM

Delivery program >

Technical data >

Product range Circuit-breaker

Design verification as

Protective function System and cable protection

per IEC/EN 61439 >

Standard/Approval IEC

Technical data ETIM7.0

Installation type Fixed

Characteristics >

Release system Thermomagnetic release

Dimensions >

Construction size NZM2

Description

NZM..S1 terminal type: NZM..XKSA cover

required

Number of poles 3 pole

Standard equipment Screw connection

Rated current = rated uninterrupted current [$I_h = I_u$] 100 A

Switching capacity

1000 V 50/60 Hz [I_{cu}] 10 kA

Setting range

Overload trip [I_r] 80 - 100 A

Short-circuit releases $[l_{rm}]$ Non-delayed $[l_{i} = l_{n} \times ...]$ 6 - 10

TECHNICAL DATA

Circuit-breakers

Rated surge voltage invariability [U_{mp}] Main contacts $8000\ V$

Rated surge voltage invariability [U_{mp}] Auxiliary contacts $6000\ V$

Rated operational voltage [Ue] 1000 V AC

Rated current = rated uninterrupted current $[I_n = I_u]$

Overvoltage category/pollution degree III/3

Rated insulation voltage [U] 1000 V

Utilization category A

Antient temperature Antient temperature, storage -40 - + 70 °C

Antient temperature Operation -25 - +70 °C

Rated short-circuit making capacity [I_{cm}]

240 V 50/60 Hz [l_{cm}] 330 kA

 $400/415 \text{ V } 50/60 \text{ Hz } [l_{cm}]$ 330 kA

440 V 50/60 Hz [l_{cm}] 286 kA

525 V 50/60 Hz [l_{cm}] 105 kA

690 V 50/60 H [lc] 40 kA

1000 V 50/60 Hz [lcm] 17 kA

Rated short-circuit breaking capacity I_{cn} [I_{cn}]

lcu to IEC/EN 60947 test cycle O-t-CO [lcu] 240 V 50/60 Hz [lcu] 150 kA

lcu to IEC/EN 60947 test cycle O-t-CO [lcu] 400/415 V 50 Hz [lcu] 150 kA

lcu to IEC/EN 60947 test cycle O-t-CO [lcu] 440 V 50/60 Hz [lcu] 130 kA

lcu to IEC/EN 60947 test cycle O-t-CO [lcu] 525 V 50/60 Hz [lcu] 50 kA

lcu to IEC/EN 60947 test cycle O-t-CO [lcu] 690 V 50/60 Hz [lcu] 20 kA

lcu to IEC/EN 60947 test cycle O-t-CO [lcu] 1000 V 50/60 Hz [lcu] 10 kA

lcs to IEC/EN 60947 test cycle O-t-CO-t-CO [lcs] 230 V 50/60 Hz [lcs] 150 kA

lcs to IEC/EN 60947 test cycle O-t-CO-t-CO [lcs] 400/415 V 50/60 Hz [lcs] $\,$ 150 kA $\,$

lcs to IEC/EN 60947 test cycle O-t-CO-t-CO [lcs] 440 V 50/60 Hz [lcs] 130 kA

lcs to IEO/EN 60947 test cycle O-t-CO-t-CO [lcs] 525 V 50/60 Hz [lcs] 37.5 kA

lcs to IEC/EN 60947 test cycle O-t-CO-t-CO [lcs] 690 V 50/60 Hz [lcs] 5 kA

lcs to IEC/EN 60947 test cycle O-t-CO-t-CO [lcs] 1000 V AC [lcs] 3 kA

Rated short-time withstand current

 $t = 0.3 s [l_{cw}]$ 1.9 kA

 $t = 1 s [l_{cw}]$ 1.9 kA

Lifespan, mechanical [Operations] 20000

Max. operating frequency 120 Ops/h

Lifespan, mechanical: of which max. 50 % trip by shunt/undervoltage release

Lifespan, electrical

1000 V 50/60 Hz [Operations] 3000

Terminal capacity

Standard equipment Screw connection

Round copper conductor Box terminal Solid 1 x (10 - 16) 2 x (6-16) mm²

Round copper conductor Box terminal Stranded 1 x (25 - 185) 2 x (25-70) mm²

Round copper conductor Tunnel terminal Solid 1 x 16 mm²

Round copper conductor Tunnel terminal Stranded Stranded Round copper conductor
Bolt terminal and rear-side connection
Direct on the switch
Solid
1 x (10 - 16)
2 x (10 - 16) mm²

Round copper conductor
Bolt terminal and rear-side connection
Direct on the switch
Stranded
1 x (25 - 50)
2 x (25 - 50) mm²

Al conductors, Qu cable Tunnel terminal Solid 1 x 16 mm²

Al conductors, Qu cable Tunnel terminal Stranded Stranded 1 x (25 - 185) ²⁾ mm²

Al conductors, Ou cable Tunnel terminal Stranded ²⁾ Up to 240 mm² can be connected depending on the cable manufacturer.

Qu strip (number of segments x width x segment thickness)
Box terminal [min.]
2 x 9 x 0.8 mm

Qu strip (number of segments x width x segment thickness)
Box terminal [max.]
10 x 16 x 0.8
(2x) 8 x 15.5 x 0,8 mm

Ou strip (number of segments x width x segment thickness)

Bolt terminal and rear-side connection

Flat copper strip, with holes [min.]

2 x 16 x 0.8 mm

Ou strip (number of segments x width x segment thickness)

Bolt terminal and rear-side connection Flat copper strip, with holes [max.] 10 x 16 x 0.8 mm

Copper busbar (width x thickness) [mm] Bolt terminal and rear-side connection Screw connection M8

Copper busbar (width x thickness) [mm] Bott terminal and rear-side connection Direct on the switch [min.] 16 x 5 mm

Copper busbar (width x thickness) [mm] Bolt terminal and rear-side connection Direct on the switch [max.] 24 x 8 mm

Control cables 1 x (0.75 - 2.5) 2 x (0.75 - 1.5) mm²

DESIGN VERIFICATION AS PER IEC/EN 61439

Technical data for design verification

Rated operational current for specified heat dissipation [I_n] 100 A

Equipment heat dissipation, current-dependent $[P_{id}]$ 25.65 W

Operating ambient temperature min. -25 $^{\circ}\text{C}$

Operating ambient temperature max. +70 °C

IEC/EN 61439 design verification

10.2 Strength of materials and parts

10.2.2 Corrosion resistance Weets the product standard's requirements.

10.2 Strength of materials and parts 10.2.3.1 Verification of thermal stability of enclosures Meets the product standard's requirements.

10.2 Strength of materials and parts10.2.3.2 Verification of resistance of insulating materials to normal heatMeets the product standard's requirements.

10.2 Strength of materials and parts
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 Strength of materials and parts 10.2.4 Resistance to ultra-violet (UV) radiation Meets the product standard's requirements.

10.2 Strength of materials and parts10.2.5 LiftingDoes not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts10.2.6 Mechanical impactDoes not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts10.2.7 InscriptionsMeets the product standard's requirements.

10.3 Degree of protection of ASSEVBLIES

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.

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 Insulation properties10.9.3 Impulse withstand voltageIs the panel builder's responsibility.

10.9 Insulation properties 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 Bectromagnetic 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

protection (EC000228)

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

Rated permanent current lu 100 A

Rated voltage 1000 - 1000 V

Rated short-circuit breaking capacity lcu at 400 V, 50 Hz $_{150\,\mathrm{kA}}$

Overload release current setting 80 - 100 A

Adjustment range short-term delayed short-circuit release 0 - 0 A

Adjustment range undelayed short-circuit release 600 - 1000 A

Integrated earth fault protection No

Type of electrical connection of main circuit Screw connection

Device construction
Built-in device fixed built-in technique

Suitable for DIN rail (top hat rail) mounting No.

DIN rail (top hat rail) mounting optional Yes

Number of auxiliary contacts as normally closed contact

0

Number of auxiliary contacts as normally open Number of auxiliary contacts as change-over contact With switched-off indicator No With under voltage release 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 Motor drive optional Yes Degree of protection (IP)

CHARACTERISTICS

Characteristic curve

Characteristic curve



Let-through current

Characteristic curve



Let-through energy

DIMENSIONS



 $\hfill \square$ Blow out area, minimum clearance to adjacent parts









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