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NZMH4-VE1250-S1 - Circuit-breaker, 3p, 1250A 1000V

290378 NZMH4-VE1250-S1

Overview Specifications Resources

290378 NZMH4-VE1250-S1

Circuit-breaker, 3p, 1250A 1000V

EL-Nummer (Norway) 0004359052

Circuit-breaker NZM4, 3 pole, Switching capacity 1000 V 50/60 Hz(Ics): 20 kA, Rated current = rated uninterrupted current(In = Iu): 1250 A, Installation type: Fixed, Screw connection, Standard/Approval: IEC, Protective function: Systems, cable, selectivity and generator protection

- Delivery program
- Technical data
- Design verification as per IEC/EN 61439
- Technical data ETIM 7.0
- Characteristics
- Dimensions

Delivery program

Product range
Circuit-breaker
Protective function
Systems, cable, selectivity and generator protection
Standard/Approval
IEC
Installation type
Fixed
Release system
Electronic release
Construction size
NZM4
Description
R.m.s. value measurement and “thermal memory”
adjustable time delay setting to overcome current peaks tr: 2 – 20 s at 6 x Ir also infinity (without overload releases)
Adjustable delay time tsd: Steps: 0, 20, 60, 100, 200, 300, 500, 750, 1000 ms
i^2t constant function: switchable
NZM..S1 terminal type: NZM..XKSA cover required
Number of poles
3 pole
Standard equipment
Screw connection
Rated current = rated uninterrupted current [$I_n = I_u$]
1250 A
Switching capacity

1000 V 50/60 Hz [I_{cu}]
20 kA
Setting range
Overload trip [I_r]
630 - 1250 A
Short-circuit releases [I_{rm}]Non-delayed [I_i = I_n x …]
2 - 12
Short-circuit releases [I_{rm}]Delayed [I_{sd} = I_r x …]
2 - 10

Technical data

Circuit-breakers
Rated surge voltage invariability [U_{imp}]Main contacts
8000 V
Rated surge voltage invariability [U_{imp}]Auxiliary contacts
6000 V
Rated operational voltage [Ue]
1000 V AC
Rated current = rated uninterrupted current [I_n = I_u]
1250 A
Overvoltage category/pollution degree
III/3
Rated insulation voltage [U_i]
1000 V
Utilization category
B
Ambient temperatureAmbient temperature, storage
- 40 - + 70 °C
Ambient temperatureOperation
-25 - +70 °C
Rated short-circuit making capacity [I_{cm}]
240 V 50/60 Hz [I_{cm}]
275 kA
400/415 V 50/60 Hz [I_{cm}]
187 kA
440 V 50/60 Hz [I_{cm}]
187 kA
525 V 50/60 Hz [I_{cm}]
143 kA
690 V 50/60 H [Ic]
100 kA
1000 V 50/60 Hz [Icm]
40 kA
Rated short-circuit breaking capacity I_{cn} [I_{cn}]
Icu to IEC/EN 60947 test cycle O-t-CO [Icu]240 V 50/60 Hz [I_{cu}]
125 kA
Icu to IEC/EN 60947 test cycle O-t-CO [Icu]400/415 V 50 Hz [I_{cu}]
85 kA
Icu to IEC/EN 60947 test cycle O-t-CO [Icu]440 V 50/60 Hz [I_{cu}]
85 kA
Icu to IEC/EN 60947 test cycle O-t-CO [Icu]525 V 50/60 Hz [I_{cu}]
65 kA
Icu to IEC/EN 60947 test cycle O-t-CO [Icu]690 V 50/60 Hz [I_{cu}]
50 kA
Icu to IEC/EN 60947 test cycle O-t-CO [Icu]1000 V 50/60 Hz [I_{cu}]
20 kA
Ics to IEC/EN 60947 test cycle O-t-CO-t-CO [Ics]230 V 50/60 Hz [I_{cs}]
63 kA
Ics to IEC/EN 60947 test cycle O-t-CO-t-CO [Ics]400/415 V 50/60 Hz [I_{cs}]
50 kA
Ics to IEC/EN 60947 test cycle O-t-CO-t-CO [Ics]440 V 50/60 Hz [I_{cs}]
50 kA
Ics to IEC/EN 60947 test cycle O-t-CO-t-CO [Ics]525 V 50/60 Hz [I_{cs}]
50 kA
Ics to IEC/EN 60947 test cycle O-t-CO-t-CO [Ics]690 V 50/60 Hz [I_{cs}]
37 kA
Ics to IEC/EN 60947 test cycle O-t-CO-t-CO [Ics]1000 V AC [Ics]

15 kA
Rated short-time withstand current
t = 0.3 s [I_{cw}]
19.2 kA
t = 1 s [I_{cw}]
19.2 kA
Lifespan, mechanical [Operations]
10000
Max. operating frequency
60 Ops/h
Lifespan, mechanical: of which max. 50 % trip by shunt/undervoltage release
Lifespan, electrical
1000 V 50/60 Hz [Operations]
500
Terminal capacity
Standard equipment
Screw connection
Round copper conductorTunnel terminalStranded4-hole
4 x (50 - 240)
mm²
Round copper conductorBolt terminal and rear-side connectionModule plateSingle hole [min.]
1 x (185 - 240) mm²
Round copper conductorBolt terminal and rear-side connectionModule plateSingle hole [max.]
2 x (70 - 185) mm²
Round copper conductorBolt terminal and rear-side connectionModule plateDouble hole [min.]
4 x 50 mm²
Round copper conductorBolt terminal and rear-side connectionModule plateDouble hole [max.]
4 x (35 - 185) mm²
Round copper conductorBolt terminal and rear-side connectionConnection width extensionConnection width extension
2 x 240
6 x (70 - 240) mm²
Al conductors, Cu cableTunnel terminalStranded4-hole
4 x (50 - 240)
mm²
Cu strip (number of segments x width x segment thickness)Flat conductor terminal [min.]
6 x 16 x 0.8 mm
Cu strip (number of segments x width x segment thickness)Flat conductor terminal [max.]
(2 x) 10 x 32 x 1.0 mm
Cu strip (number of segments x width x segment thickness)Module plateSingle hole
(2 x) 10 x 50 x 1.0 mm
Cu strip (number of segments x width x segment thickness)Bolt terminal and rear-side connectionFlat copper strip, with holes [min.]
(2 x) 10 x 50 x 1.0 mm
Cu strip (number of segments x width x segment thickness)Bolt terminal and rear-side connectionFlat copper strip, with holes [max.]
(2 x) 10 x 50 x 1.0 mm
Cu strip (number of segments x width x segment thickness)Bolt terminal and rear-side connectionConnection width extension
(2 x) 10 x 80 x 1.0 mm
Copper busbar (width x thickness) [mm]Bolt terminal and rear-side connectionScrew connection
M10
Copper busbar (width x thickness) [mm]Bolt terminal and rear-side connectionDirect on the switch [min.]
25 x 5 mm
Copper busbar (width x thickness) [mm]Bolt terminal and rear-side connectionDirect on the switch [max.]
2 x (50 x 10)
2 x (80 x 10) mm
Copper busbar (width x thickness) [mm]Bolt terminal and rear-side connectionModule plateSingle hole [min.]
25 x 5 mm
Copper busbar (width x thickness) [mm]Bolt terminal and rear-side connectionModule plateSingle hole [max.]
2 x (50 x 10)
mm
Copper busbar (width x thickness) [mm]Bolt terminal and rear-side connectionModule plateDouble hole
2 x (50 x 10) mm
Copper busbar (width x thickness) [mm]Bolt terminal and rear-side connectionConnection width extensionConnection width extension [min.]
60 x 10 mm
Copper busbar (width x thickness) [mm]Bolt terminal and rear-side connectionConnection width extensionConnection width extension [max.]
2 x (80 x 10) mm

Control cables
1 x (0.75 - 2.5)
2 x (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]
1250 A
Equipment heat dissipation, current-dependent [P_{vid}]
173.44 W
Operating ambient temperature min.
-25 °C
Operating ambient temperature max.
+70 °C
IEC/EN 61439 design verification
10.2 Strength of materials and parts10.2.2 Corrosion resistance
Meets the product standard's requirements.
10.2 Strength of materials and parts10.2.3.1 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 heat
Meets the product standard's requirements.
10.2 Strength of materials and parts10.2.3.3 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 parts10.2.4 Resistance to ultra-violet (UV) radiation
Meets the product standard's requirements.
10.2 Strength of materials and parts10.2.5 Lifting
Does not apply, since the entire switchgear needs to be evaluated.
10.2 Strength of materials and parts10.2.6 Mechanical impact
Does not apply, since the entire switchgear needs to be evaluated.
10.2 Strength of materials and parts10.2.7 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 properties10.9.2 Power-frequency electric strength
Is the panel builder's responsibility.
10.9 Insulation properties10.9.3 Impulse withstand voltage
Is the panel builder's responsibility.
10.9 Insulation properties10.9.4 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.

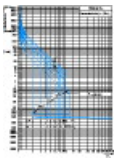
Technical data ETIM 7.0

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 Iu
1250 A

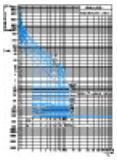
Rated voltage
1000 - 1000 V
Rated short-circuit breaking capacity Icu at 400 V, 50 Hz
85 kA
Overload release current setting
630 - 1250 A
Adjustment range short-term delayed short-circuit release
1250 - 12500 A
Adjustment range undelayed short-circuit release
2500 - 15000 A
Integrated earth fault protection
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
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

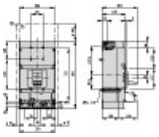
Characteristic curve



Characteristic curve



Dimensions



□ Blow out area, minimum clearance to adjacent parts
Ui ≤ 690 V: 100 mm
Ui ≤ 1500 V: 200 mm

□ Minimum clearance to adjacent parts
Ui ≤ 1000 V: 15 mm
Ui ≤ 1500 V: 70 mm

CAD data

- Product-specific CAD data
  (Web)
- 3D Preview
  (Web)

DWG files

- DA-CD-nzm4_3p
  File
  (Web)

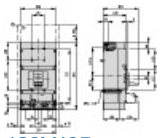
Step files

- DA-CS-nzm4_3p
  File
  (Web)

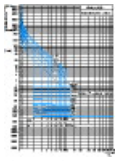
Additional product information

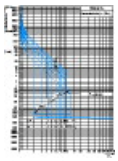
- Weight
  (Web)
- Temperature dependency, Derating
  (Web)
- Effective power loss
  (Web)
- Selectivity, Back Up Protection and Coordination Guide
  (PDF)
- Setting-Specific Representation of Tripping Characteristics and Competent Assessment of their Interaction
  (PDF)
- Busbar Component Adapters for modern Industrial control panels
  (PDF)
- CurveSelect characteristics program
  (Web)
- Eaton configurator
  (Web)
- additional technical information for NZM power switch
  (PDF)

Dimensions single product

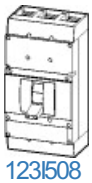
- 
  123X435
  Line drawing
  Circuit-breakers
  □ Blow out area, minimum clearance to adjacent parts
  □ Minimum clearance to adjacent parts

Characteristic curve

- 
  123U174
  Coordinate visualization
  NZM4-VE630...1600 tripping characteristic

- 
  123U175
  Coordinate visualization
  NZM4-VE630...1600 tripping characteristic

3D drawing

- 
  123I508
  Line drawing
  Circuit-breakers, switch-disconnectors

Product photo

- 
  1230PIC-715
  Photo

Instruction Leaflet

- AWA1230-2022, AWA1230-2540 (IL01210010Z)
  Asset
  IL01210010Z2018_11
  (PDF, 11/18, Language independent)

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