

NZM1-4 molded case circuit-breakers up to 1600 A

NZM1-4 molded case circuit-breakers

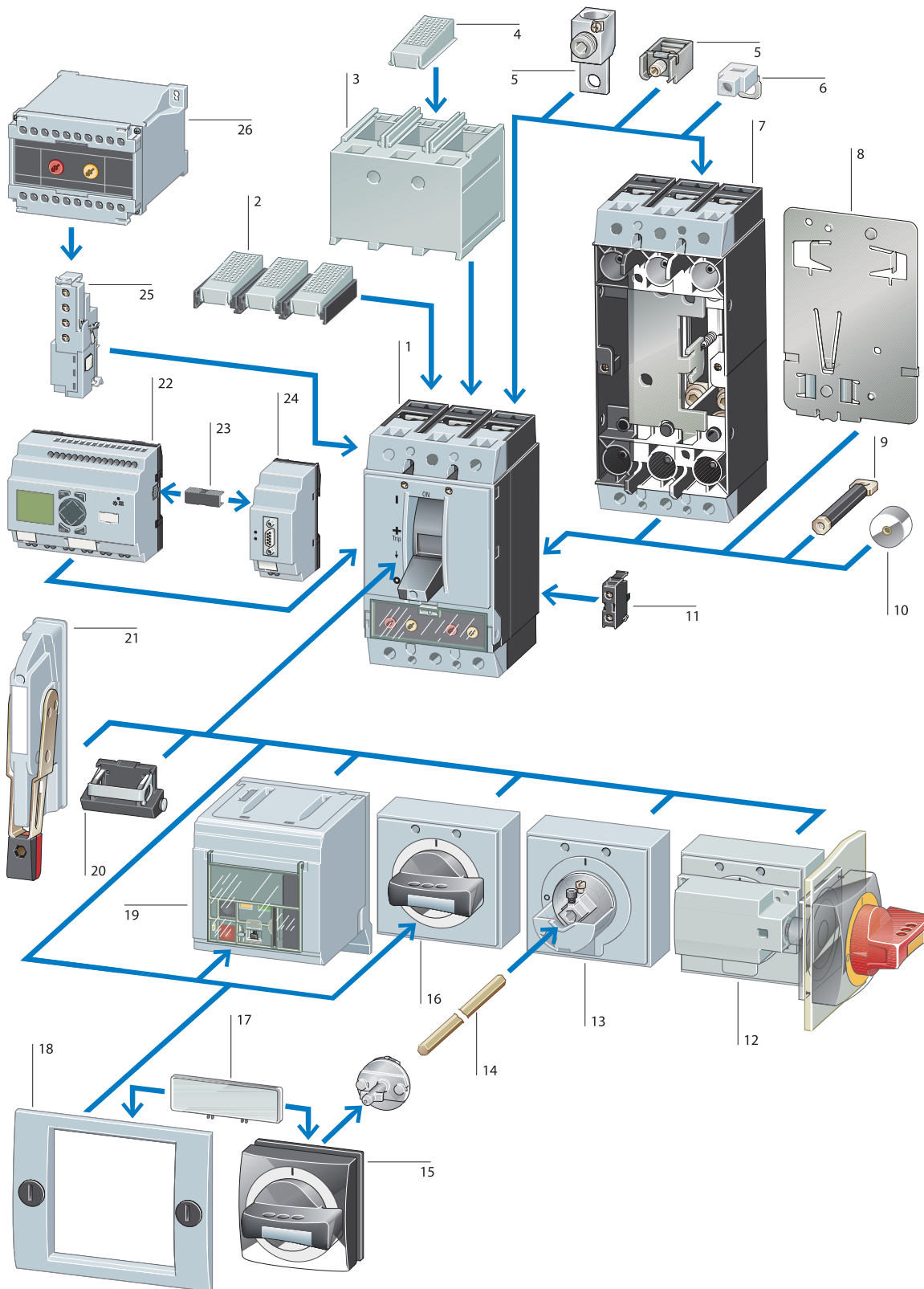


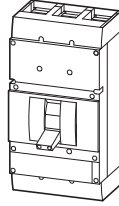
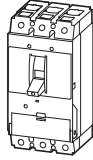
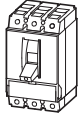
Powering Business Worldwide

1.1 NZM1-4 molded case circuit-breakers

System overview

Circuit-breakers, switch-disconnectors





Electronic releases
Systems, cable, selectivity and generator protection

Motor protection

| I_u A | I_u A | I_u A | I_r A | I_{sd} A | I_i A | I_u A | I_r A | I_i A |
|------------|------------|------------|----------------------|---------------------|---------------------|------------|----------------------|---------------------|
| 100 | 250 | 630 | $0.5 - 1 \times I_n$ | $2 - 10 \times I_r$ | $2 - 12 \times I_n$ | 90 | $0.5 - 1 \times I_n$ | $2 - 14 \times I_r$ |
| 160 | 400 | 800 | $0.5 - 1 \times I_n$ | $2 - 10 \times I_r$ | $2 - 12 \times I_n$ | 140 | $0.5 - 1 \times I_n$ | $2 - 14 \times I_r$ |
| 250 | 630 | 1000 | $0.5 - 1 \times I_n$ | $2 - 10 \times I_r$ | $2 - 12 \times I_n$ | 220 | $0.5 - 1 \times I_n$ | $2 - 14 \times I_r$ |
| | | 1250 | $0.5 - 1 \times I_n$ | $2 - 10 \times I_r$ | $2 - 12 \times I_n$ | 350 | $0.5 - 1 \times I_n$ | $2 - 14 \times I_r$ |
| | | 1600 | $0.5 - 1 \times I_n$ | $2 - 10 \times I_r$ | $2 - 12 \times I_n$ | 450 | $0.5 - 1 \times I_n$ | $2 - 14 \times I_r$ |
| | | | | | | 550 | $0.5 - 1 \times I_n$ | $2 - 14 \times I_r$ |
| | | | | | | 875 | $0.5 - 1 \times I_n$ | $2 - 14 \times I_r$ |
| | | | | | | 1400 | $0.5 - 1 \times I_n$ | $2 - 14 \times I_r$ |

| NZMN2-E... | | NZMN3-E... | | NZMN4-E... | | NZMN2-ME... | | NZMN3-ME... | | NZMN4-ME... | |
|------------|------|------------|------|------------|------|-------------|------|-------------|------|-------------|------|
| 50 | 0.25 | 50 | 0.25 | 50 | 0.25 | 50 | 0.25 | 50 | 0.25 | 50 | 0.25 |
| 35 | 0.25 | 35 | 0.25 | 35 | 0.25 | 35 | 0.25 | 35 | 0.25 | 35 | 0.25 |
| 25 | 0.25 | 25 | 0.25 | 25 | 0.25 | 25 | 0.25 | 25 | 0.25 | 25 | 0.25 |
| 20 | 0.30 | 20 | 0.30 | 20 | 0.30 | 20 | 0.30 | 20 | 0.30 | 20 | 0.30 |

| NZMS2-E... | | NZMS3-E... | | NZMS2-ME... | | NZMS3-ME... | |
|------------|------|------------|------|-------------|------|-------------|------|
| 70 | 0.20 | 70 | 0.20 | 70 | 0.20 | 70 | 0.20 |
| 65 | 0.20 | 65 | 0.20 | 65 | 0.20 | 65 | 0.20 |
| 36 | 0.25 | 36 | 0.25 | 36 | 0.25 | 36 | 0.25 |
| 20 | 0.30 | 20 | 0.30 | 20 | 0.30 | 20 | 0.30 |

| NZMH2-E... | | NZMH3-E... | | NZMH4-E... | | NZMH2-ME... | | NZMH3-ME... | | NZMH4-ME... | |
|------------|------|------------|------|------------|------|-------------|------|-------------|------|-------------|------|
| 150 | 0.20 | 150 | 0.20 | 150 | 0.20 | 150 | 0.20 | 150 | 0.20 | 85 | 0.20 |
| 130 | 0.20 | 130 | 0.20 | 130 | 0.20 | 130 | 0.20 | 130 | 0.20 | 85 | 0.20 |
| 50 | 0.25 | 50 | 0.25 | 50 | 0.25 | 50 | 0.25 | 65 | 0.20 | 65 | 0.20 |
| 20 | 0.30 | 25 | 0.30 | 35 | 0.25 | 20 | 0.30 | 25 | 0.30 | 50 | 0.25 |

A selection of approved circuit-breakers and switch-disconnectors for world-wide use



1.3

NZM1-4 molded case circuit-breakers

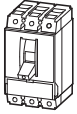
Circuit-breakers

Electronic release, 3 pole

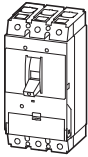
Motor protection

| Rated current = Rated uninterrupted current | Setting range | | Rated operational power AC-3 at 400 V 50/60 Hz P kW | Rated operational current AC-3 at 400 V 50/60 Hz I_e kW | Switching capacity N 50 kA 415 V 50/60 Hz |
|--|--|--|---|---|--|
| | Overload releases | Short-circuit releases | | | |
| $I_n = I_u$ A | I_r A  | I_i A  | | | Part no. Article no. |
| 90 | 45-90 | 90-1260 | 45 | 81 | NZMN2-ME90 146675 |
| 140 | 70-140 | 140-1960 | 75 | 134 | NZMN2-ME140 146681 |
| 220 | 110-220 | 220-3080 | 110 | 196 | NZMN2-ME220 146683 |
| 220 | 110-220 | 220-3080 | 110 | 196 | NZMN3-ME220 146784 |
| 350 | 175-350 | 350-4900 | 200 | 349 | NZMN3-ME350 146785 |
| 450 | 225-450 | 450-6300 | 250 | 437 | NZMN3-ME450 146796 |
| 550 | 275-550 | 550-7700 | 315 ¹⁾ | 544 ¹⁾ | NZMN4-ME 550 146853 |
| 875 | 438-875 | 875-12250 | 500 ¹⁾ | 820 ¹⁾ | NZMN 4-ME 875 146859 |
| 1400 | 700-1400 | 1400-19600 | 630 ¹⁾ | 1066 ¹⁾ | NZMN4-ME1400 146863 |

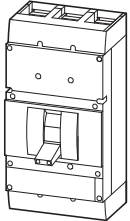
Screw terminals
as accessories



Screw terminals
as accessories



Screw terminals
as accessories



Notes

Fitted with following terminals:


- Box terminals
3 pole: NZM2-160-XKC, NZM2-250-XKC, NZM3-XKC
4 pole: NZM2-4-160-XKC, NZM2-4-250-XKC, NZM3-4-XKC
- Rear terminal bolts
3 pole: NZM2-XKR; NZM3-XKR; NZM4-XKR
4 pole: NZM2-4-XKR; NZM3-4-XKR; NZM4-4-XKR
Please inquire for other available terminals.

¹⁾ at 690 V AC NZM...4-ME550: $P = 560$ kW; $I_e = 550$ A
NZM...4-ME875: $P = 600$ kW; $I_e = 588$ A
NZM...4-ME1400: $P = 600$ kW; $I_e = 588$ A

Switching capacity N
50 kA
 at 415 V 50/60 Hz

Switching capacity S
70 kA
 at 415 V 50/60 Hz

Switching capacity H
100 kA
 at 415 V 50/60 Hz

| Part no. Article no. | Part no. Article no. | Part no. Article no. | Std. pack | Note |
|-------------------------------|-------------------------------|-------------------------------|--------------|--|
| | | NZMH2-4-A20 146992 | 1 off | IEC/EN 60947-2,  Comply with ROHS |
| | | NZMH2-4-A25 146993 | 1 off | Adjustable overload releases I_f • $0.8 - 1 \times I_n$ (Factory setting $0.8 \times I_n$) |
| | | NZMH2-4-A32 146994 | 1 off | Set value for neutral conductor is same as set value I_f for main pole. |
| | | NZMH2-4-A40 146989 | 1 off | |
| | | NZMH2-4-A50 146990 | 1 off | Adjustable short-circuit releases I_s • $6 - 10 \times I_n$ (Factory setting $6 \times I_n$) |
| | | NZMH2-4-A63 146991 | 1 off | Short-circuit releases I_s : • 350 A, when $I_n = 20-32A$ |
| | | NZMH2-4-A80 146995 | 1 off | NZM...2-4-A..... |
| | | NZMH2-4-A100 146996 | 1 off | 100% short-circuit and over load protection for 4th pole |
| NZMN2-4-A125 146961 | NZMS2-4-A125 146975 | NZMH2-4-A125 146997 | 1 off | Fitted with following terminals: • Box terminals as accessories, copper 3 Pole: NZM2-160-XKC, ($\leq 160A$) NZM2-250-XKC (160A-250A) 4 Pole: NZM2-4-160-XKC, NZM2-4-250-XKC |
| NZMN2-4-A160 146963 | NZMS2-4-A160 146977 | NZMH2-4-A160 146999 | 1 off | |
| NZMN2-4-A200 146965 | NZMS2-4-A200 146979 | NZMH2-4-A200 147001 | 1 off | • Rear terminal bolts 3 Pole: NZM2-XKR; 4 Pole: NZM2-4-XKR |
| NZMN2-4-A250 146969 | NZMS2-4-A250 146983 | NZMH2-4-A250 147005 | 1 off | |
| NZMN3-4-A320 147017 | | NZMH3-4-A320 147051 | 1 off | |
| NZMN3-4-A400 147019 | | NZMH3-4-A400 147053 | 1 off | |
| NZMN3-4-A500 147025 | | NZMH3-4-A500 147057 | 1 off | |

1.3

NZM1-4 molded case circuit-breakers

Circuit-breakers

Electronic releases, 4 pole

System and cable protection

Rated current =
Rated
uninterrupted
current

Setting range

Overload releases

Phase
conductors



Neutral
conductor



Short-circuit
releases



Switching capacity N
50 kA

at 415 V 50/60 Hz

Switching capacity S
70 kA

at 415 V 50/60 Hz

$I_n = I_u$
A

I_r
A

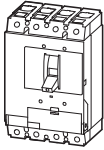
I_r
A

I_i
A

Part no.
Article no.

Part no.
Article no.

Screw terminals as accessories



630

315-630

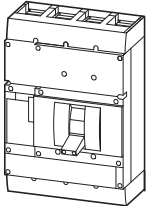
315-630

1260-5040

NZMN3-4-AE630
147029

NZMS3-4-AE630
147043

Screw terminals as accessories



800

400-800

400-800

1600-9600

NZMN4-4-AE800
147069

1000

500-1000

500-1000

2000-12000

NZMN4-4-AE1000
147073

1250

630-1250

630-1250

2500-15000

NZMN4-4-AE1250
147077

1600

800-1600

800-1600

3200-19200

NZMN4-4-AE1600
147081

Notes

Please refer to page 101 for fitted with following terminals.

¹⁾ NZMH4-4-AE...switching capacity :100KA.

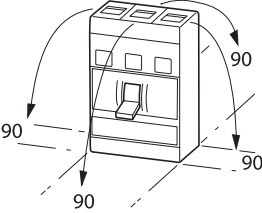
²⁾ Please refer to page 119 for ground-fault protection.

1.14

NZM1-4 molded case circuit-breakers

Technical data

Circuit-breakers

| | Rated uninterrupted current max. 160 A | | | | |
|--|--|---------|-------|-------|-------|
| | NZMB1 | NZMC1 | NZMN1 | NZMS1 | NZMH1 |
| General | | | | | |
| Standards | IEC/EN 60947 | | | | |
| Contact protection | Finger and back-of-hand proof to DIN EN 50274/VDE 0660 Part 514 | | | | |
| Climatic proofing | Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30 | | | | |
| Ambient temperature | | | | | |
| Storage | °C | -25/+70 | | | |
| Operation | °C | -25/+70 | | | |
| Mechanical shock resistance (IEC/EN 60068-2-27) | 20 (half-sinusoidal shock 20 ms) | | | | |
| Safe isolation according to EN 61140 | | | | | |
| Between auxiliary contacts and main contacts | V AC | 500 | | | |
| Between the auxiliary contacts | V AC | 300 | | | |
| Built-in position | Vertical and 90° in all directions | | | | |
|  | | | | | |
| Direction of incoming supply | Any | | | | |
| Degree of protection | | | | | |
| Device | In the area of the HMI devices: IP20 (basic degree of protection) | | | | |
| Enclosure | With insulating surround: IP40 With door coupling rotary handle: IP66 | | | | |
| Terminal type | Tunnel terminal: IP10 Phase isolator and cable terminal: IP00 | | | | |