



Compact NSX & NSXm

Catalogue 2018

Moulded-case circuit breakers
and switch-disconnectors
from 16 to 630 A - up to 690 V



• WEB2 cat.2018

schneider-electric.com

Life Is On

Schneider
Electric

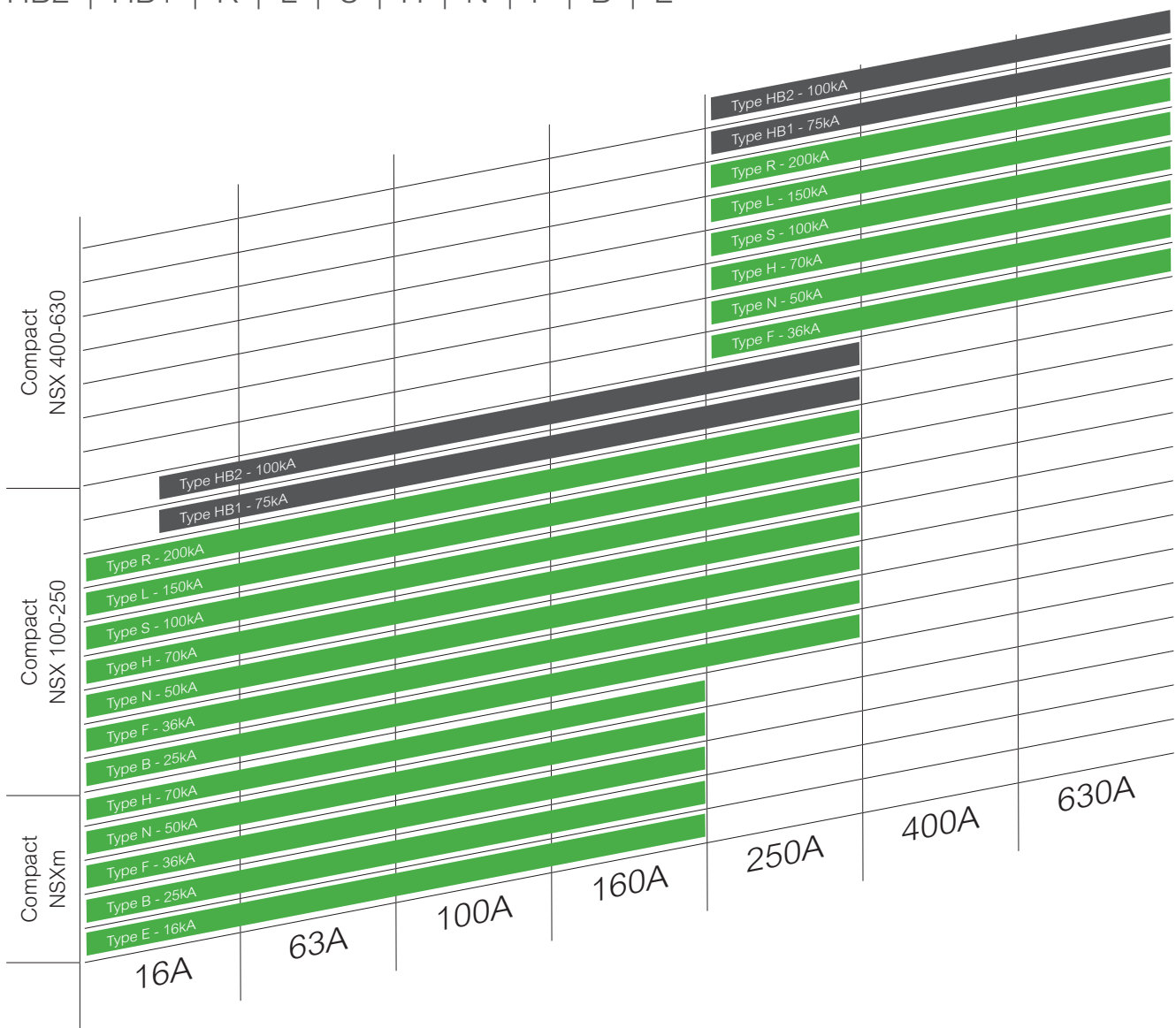
Compact NSX and NSXm, even more innovative and efficient

Compact circuit breakers feature Schneider Electric's exclusive Roto-Active Breaking System; it reduces the effects of short circuits of your installation.

Today, the Compact range is optimized with a high level of breaking capacities, outstanding selectivity and cascading. It offers more advanced functions and ergonomic designs for easy installation and operations.

Ten performance levels

HB2 | HB1 | R | L | S | H | N | F | B | E



Icu = (kA rms) at 690V AC
 Icu = (kA rms) at 415V AC

Characteristics and performance

Compact NSX circuit breakers from 100 to 250 A up to 690 V

Ue = Nominal spænding

PB10512.eps



Compact NSX100/160/250.

PB11048_40.eps



Compact NSX250 R.

PB110420.eps



Compact NSX250 HB2.

Common characteristics

| | | | |
|---------------------------|-------------------------------------|----------------|-----|
| Rated voltage | Insulation voltage (V) | Ui | 800 |
| | Insulation voltage for ELCB [6] Ui | | 500 |
| | Impulse withstand voltage (kV) Uimp | | 8 |
| | Operational voltage (V) Ue | AC 50/60 Hz | 690 |
| | Operation voltage for ELCB [6] Ue | AC 50/60 Hz | 440 |
| Suitability for isolation | | IEC/EN 60947-2 | yes |
| Utilisation category | | | A |
| Pollution degree | | IEC 60664-1 | 3 |

Circuit breakers

Breaking capacity levels

Electrical characteristics as per IEC/EN 60947-2

| | | |
|-------------------|----|-------|
| Rated current (A) | In | 40 °C |
| Number of poles | | |

Breaking capacity (kA rms)

| | | | |
|-------------------------|-----|-------------|-----------|
| Max kortslutningsniveau | Icu | AC 50/60 Hz | 220/240 V |
| | | | 380/415 V |
| | | | 440 V |
| | | | 500 V |
| | | | 525 V |
| | | | 660/690 V |

Service breaking capacity (kA rms)

| | | | |
|--|-----|-------------|-----------|
| | Ics | AC 50/60 Hz | 220/240 V |
| | | | 380/415 V |
| | | | 440 V |
| | | | 500 V |
| | | | 525 V |
| | | | 660/690 V |

Durability (C-O cycles)

| | | | | |
|--|------------|--|-------|------------|
| | Mechanical | | | |
| | | | | Electrical |
| | | | 690 V | In/2 |
| | | | | In |

Characteristics as per UL 508

| | | |
|----------------------------|-------------|-------|
| Breaking capacity (kA rms) | AC 50/60 Hz | 240 V |
| | | 480 V |
| | | 600 V |

Protection and measurements

| | |
|-------------------------------------|---|
| Short-circuit protection | Magnetic only |
| Overload / short-circuit protection | Thermal magnetic |
| | Electronic |
| | with neutral protection (Off-0.5-1-OSN) [1] |
| | with ground-fault protection |
| | with zone selective interlocking (ZSI) [2] |

Display / I, U, f, P, E, THD measurements / interrupted-current measurement

| | |
|---------|-----------------------------|
| Options | Power Meter display on door |
| | Operating assistance |
| | Counters |
| | Histories and alarms |
| | Metering Com |
| | Device status/control Com |
| | |

Earth-leakage protection

| | |
|--|--------------------|
| | By Vigi add-on [3] |
| | By Vigirex relay |

Installation / connections

Dimensions and weights

| | | |
|-----------------|--------------------------|------|
| Dimensions (mm) | Fixed, front connections | 2/3P |
| | | 4P |
| Weight (kg) | Fixed, front connections | 2/3P |
| | | 4P |

Connections

| | | |
|-----------------------|---------------|------------------------|
| Connection terminals | Pitch | With/without spreaders |
| Large Cu or Al cables | Cross-section | mm ² |

Source-changeover system

| |
|--------------------------------|
| Manual mechanical interlocking |
| Automatic source-changeover |

[1] OSN: Over Sized Neutral protection for neutrals carrying high currents (e.g. 3rd harmonics).

[2] ZSI: Zone Selective Interlocking using pilot wires.

[3] Vigi add-on is not available for breaking capacity levels HB1/HB2.

[4] There is no 160 A frame, use 250 A frame with lower rating trip units for R, HB1, HB2.

[5] 2P circuit breaker in 3P case for B and F types, only with thermal-magnetic trip unit.

[6] Earth Leakage Circuit Breaker (Micrologic Vigi 4.2 and 7.2 E).

Characteristics and performance

Compact NSX circuit breakers from 100 to 250 A up to 690 V



Common characteristics

| | | | |
|----------|--------------|---------------------------------------|----------------------------------|
| Control | Manual | With toggle | <input checked="" type="radio"/> |
| | | With direct or extended rotary handle | <input checked="" type="radio"/> |
| Versions | Electrical | With remote control | <input checked="" type="radio"/> |
| | | Fixed | <input checked="" type="radio"/> |
| | Withdrawable | Plug-in base | <input checked="" type="radio"/> |
| | | Chassis | <input checked="" type="radio"/> |

| NSX100 | | | | | | | NSX160 ^[4] | | | | | | | NSX250 | | | | | | | | | | | | | |
|----------------------------------|----|----|-----|-----|-----|----------------------------------|-----------------------|-----|----------------------------------|----|----|----------------------------------|-----|-------------------------|-----|-----|-----|----------------------------------|----|----|------|-----|-----|-----|-----|-----|--|
| B | F | N | H | S | L | R | HB1 | HB2 | B | F | N | H | S | L | R | HB1 | HB2 | B | F | N | H | S | L | R | HB1 | HB2 | |
| 100 | | | | | | | 160 | | | | | | | 250 | | | | | | | | | | | | | |
| 2 ^[5] , 3, 4 | | | | | | | 3, 4 | | | | | | | 2 ^[5] , 3, 4 | | | | | | | 3, 4 | | | | | | |
| 40 | 85 | 90 | 100 | 120 | 150 | 200 | - | - | 40 | 85 | 90 | 100 | 120 | 150 | 200 | - | - | 40 | 85 | 90 | 100 | 120 | 150 | 200 | - | - | |
| 25 | 36 | 50 | 70 | 100 | 150 | 200 | - | - | 25 | 36 | 50 | 70 | 100 | 150 | 200 | - | - | 25 | 36 | 50 | 70 | 100 | 150 | 200 | - | - | |
| 20 | 35 | 50 | 65 | 90 | 130 | 200 | - | - | 20 | 35 | 50 | 65 | 90 | 130 | 200 | - | - | 20 | 35 | 50 | 65 | 90 | 130 | 200 | - | - | |
| 15 | 25 | 36 | 50 | 65 | 70 | 80 | 85 | 100 | 15 | 30 | 36 | 50 | 65 | 70 | 80 | 85 | 100 | 15 | 30 | 36 | 50 | 65 | 70 | 80 | 85 | 100 | |
| - | 22 | 35 | 35 | 40 | 50 | 65 | 80 | 100 | - | 22 | 35 | 35 | 40 | 50 | 65 | 80 | 100 | - | 22 | 35 | 35 | 40 | 50 | 65 | 80 | 100 | |
| - | 8 | 10 | 10 | 15 | 20 | 45 | 75 | 100 | - | 8 | 10 | 10 | 15 | 20 | 45 | 75 | 100 | - | 8 | 10 | 10 | 15 | 20 | 45 | 75 | 100 | |
| 40 | 85 | 90 | 100 | 120 | 150 | 200 | - | - | 40 | 85 | 90 | 100 | 120 | 150 | 200 | - | - | 40 | 85 | 90 | 100 | 120 | 150 | 200 | - | - | |
| 25 | 36 | 50 | 70 | 100 | 150 | 200 | - | - | 25 | 36 | 50 | 70 | 100 | 150 | 200 | - | - | 25 | 36 | 50 | 70 | 100 | 150 | 200 | - | - | |
| 20 | 35 | 50 | 65 | 90 | 130 | 200 | - | - | 20 | 35 | 50 | 65 | 90 | 130 | 200 | - | - | 20 | 35 | 50 | 65 | 90 | 130 | 200 | - | - | |
| 7 | 12 | 36 | 50 | 65 | 70 | 80 | 85 | 100 | 15 | 30 | 36 | 50 | 65 | 70 | 80 | 85 | 100 | 15 | 30 | 36 | 50 | 65 | 70 | 80 | 85 | 100 | |
| - | 11 | 35 | 35 | 40 | 50 | 65 | 80 | 100 | - | 22 | 35 | 35 | 40 | 50 | 65 | 80 | 100 | - | 22 | 35 | 35 | 40 | 50 | 65 | 80 | 100 | |
| - | 4 | 10 | 10 | 15 | 20 | 45 | 75 | 100 | - | 8 | 10 | 10 | 15 | 20 | 45 | 75 | 100 | - | 8 | 10 | 10 | 15 | 20 | 45 | 75 | 100 | |
| 50000 | | | | | | | 20000 | | | | | | | 20000 | | | | | | | | | | | | | |
| 50000 | | | | | | | 20000 | | | | | | | 20000 | | | | | | | | | | | | | |
| 30000 | | | | | | | 10000 | | | | | | | 10000 | | | | | | | | | | | | | |
| 20000 | | | | | | | 10000 | | | | | | | 10000 | | | | | | | | | | | | | |
| 10000 | | | | | | | 5000 | | | | | | | 5000 | | | | | | | | | | | | | |
| - | 85 | 85 | 85 | - | - | - | - | - | - | 85 | 85 | 85 | - | - | - | - | - | - | 85 | 85 | 85 | - | - | - | - | - | |
| - | 25 | 50 | 65 | - | - | - | - | - | - | 35 | 50 | 65 | - | - | - | - | - | - | 35 | 50 | 65 | - | - | - | - | - | |
| - | 10 | 10 | 10 | - | - | - | - | - | - | 10 | 10 | 10 | - | - | - | - | - | - | 15 | 15 | 15 | - | - | - | - | - | |
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| <input checked="" type="radio"/> | | | | | | | | | <input checked="" type="radio"/> | | | | | | | | | <input checked="" type="radio"/> | | | | | | | | | |
| 105 x 161 x 86 | | | | | | 105 x 161 x 86 | | | | | | 105 x 161 x 86 | | | | | | 105 x 161 x 86 | | | | | | | | | |
| 140 x 161 x 86 | | | | | | 140 x 161 x 86 | | | | | | 140 x 161 x 86 | | | | | | 140 x 161 x 86 | | | | | | | | | |
| 2.05 | | | | | | 2.4 | | | | | | 2.2 | | | | | | 2.4 | | | | | | | | | |
| 2.4 | | | | | | 2.8 | | | | | | 2.6 | | | | | | 2.8 | | | | | | | | | |
| 35/45 mm | | | | | | 35/45 mm | | | | | | 35/45 mm | | | | | | 35/45 mm | | | | | | | | | |
| 300 | | | | | | 300 | | | | | | 300 | | | | | | 300 | | | | | | | | | |
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Characteristics and performance

Compact NSX circuit breakers from 400 to 630 A up to 690 V

PB1108166.eps



Compact NSX400/630.

PB1110011.eps



Compact NSX630 R.

PB1110131.eps



Compact NSX630 HB2.

[1] OSN: Over Sized Neutral protection for neutrals carrying high currents (e.g. 3rd harmonics).

[2] ZSI: Zone Selective Interlocking using pilot wires.

[3] Vigi add-on is not available for breaking capacity levels HB1/HB2.

[4] Earth Leakage Circuit Breaker (Micrologic Vigi 4.3 and 7.3 E)

Common characteristics

| | | | |
|---------------------------|---------------------------------|----------------|-----|
| Rated voltages | Insulation voltage (V) | Ui | 800 |
| | Insulation voltage for ELCB [4] | | 500 |
| | Impulse withstand voltage (kV) | Uimp | 8 |
| | Operational voltage (V) | Ue AC 50/60 Hz | 690 |
| | Operation voltage for ELCB [4] | Ue AC 50/60 Hz | 440 |
| Suitability for isolation | | IEC/EN 60947-2 | yes |
| Utilisation category | | | A |
| Pollution degree | | IEC 60664-1 | 3 |

Max nominal spændingsniveau

Circuit breakers

Breaking capacity levels

Electrical characteristics as per IEC/EN 60947-2

| | | |
|----------------------------|-----|-----------------------|
| Rated current (A) | In | 40 °C |
| Number of poles | | |
| Breaking capacity (kA rms) | Icu | AC 50/60 Hz 220/240 V |
| | | 380/415 V |
| | | 440 V |
| | | 500 V |
| | | 525 V |
| | | 660/690 V |

Max kortslutningsniveau

Service breaking capacity (kA rms)

| | | |
|-------------------------|------------|-----------------------|
| | Ics | AC 50/60 Hz 220/240 V |
| | | 380/415 V |
| | | 440 V |
| | | 500 V |
| | | 525 V |
| | | 660/690 V |
| Durability (C-O cycles) | Mechanical | |
| | Electrical | 440 V In/2 |
| | | 690 V In/2 |
| | | In |

Characteristics as per UL 508

| | | |
|----------------------------|-------------|-------|
| Breaking capacity (kA rms) | AC 50/60 Hz | 240 V |
| | | 480 V |
| | | 600 V |

Protection and measurements

| | |
|---|--|
| Short-circuit protection | Magnetic only |
| Overload / short-circuit protection | Thermal magnetic Electronic |
| | with neutral protection (Off-0.5-1-OSN) [1] |
| | with ground-fault protection |
| | with zone selective interlocking (ZSI) [2] |
| Display / I, U, f, P, E, THD measurements / interrupted-current measurement | |
| Options | Power Meter display on door Operating assistance Counters Histories and alarms Metering Com Device status/control Com |
| Earth-leakage protection | By Vigi add-on [3] By Vigirex relay |

Installation / connections

Dimensions and weights

| | | |
|---------------------------|--------------------------|------------|
| Dimensions (mm) W x H x D | Fixed, front connections | 2/3P 4P |
| Weight (kg) | Fixed, front connections | 2/3P 4P |

Connections

| | | |
|-----------------------|---------------|------------------------|
| Connection terminals | Pitch | With/without spreaders |
| Large Cu or Al cables | Cross-section | mm ² |

Source-changeover system

Manual mechanical interlocking

Automatic source-changeover

Characteristics and performance

Compact NSX circuit breakers from 400 to 630 A up to 690 V

A

Common characteristics

| | | | |
|----------|--------------|---------------------------------------|----------------------------------|
| Control | Manual | With toggle | <input checked="" type="radio"/> |
| | | With direct or extended rotary handle | <input checked="" type="radio"/> |
| Versions | Electrical | With remote control | <input checked="" type="radio"/> |
| | Fixed | | <input checked="" type="radio"/> |
| | Withdrawable | Plug-in base | <input checked="" type="radio"/> |
| | | Chassis | <input checked="" type="radio"/> |

| NSX400 | | | | | | | | | NSX630 | | | | | | | | | I _r = 225 - 500 A | | | I _r = 501 - 630 A | | |
|------------|-----------|-----------|------------|------------|------------|-----|-----|--|-----------|------------|-----------|------------|------------|------------|------------|-----|--|------------------------------|-----|-----|------------------------------|-----|-----|
| F | N | H | S | L | R | HB1 | HB2 | | F | N | H | S | L | R | HB1 | HB2 | | R | HB1 | HB2 | R | HB1 | HB2 |
| 400 | | | | | 400 | | | | | 630 | | | | | 630 | | | | | | | | |
| 3, 4 | | | | | 3, 4 | | | | | 3, 4 | | | | | 3, 4 | | | | | | | | |
| 40 | 85 | 100 | 120 | 150 | 200 | - | - | | 40 | 85 | 100 | 120 | 150 | 200 | - | - | | 200 | - | - | 200 | - | - |
| 36 | 50 | 70 | 100 | 150 | 200 | - | - | | 36 | 50 | 70 | 100 | 150 | 200 | - | - | | 200 | - | - | 200 | - | - |
| 30 | 42 | 65 | 90 | 130 | 200 | - | - | | 30 | 42 | 65 | 90 | 130 | 200 | - | - | | 200 | - | - | 200 | - | - |
| 25 | 30 | 50 | 65 | 70 | 80 | 85 | 100 | | 25 | 30 | 50 | 65 | 70 | 80 | 85 | 100 | | 80 | 85 | 100 | 80 | 85 | 100 |
| 20 | 22 | 35 | 40 | 50 | 65 | 80 | 100 | | 20 | 22 | 35 | 40 | 50 | 65 | 80 | 100 | | 65 | 80 | 100 | 65 | 80 | 100 |
| 10 | 10 | 20 | 25 | 35 | 45 | 75 | 100 | | 10 | 10 | 20 | 25 | 35 | 45 | 75 | 100 | | 45 | 75 | 100 | 45 | 75 | 100 |
| 40 | 85 | 100 | 120 | 150 | 200 | - | - | | 40 | 85 | 100 | 120 | 150 | 200 | - | - | | 200 | - | - | 200 | - | - |
| 36 | 50 | 70 | 100 | 150 | 200 | - | - | | 36 | 50 | 70 | 100 | 150 | 200 | - | - | | 200 | - | - | 200 | - | - |
| 30 | 42 | 65 | 90 | 130 | 200 | - | - | | 30 | 42 | 65 | 90 | 130 | 200 | - | - | | 200 | - | - | 200 | - | - |
| 25 | 30 | 50 | 65 | 70 | 80 | 85 | 100 | | 25 | 30 | 50 | 65 | 70 | 80 | 85 | 100 | | 80 | 85 | 100 | 80 | 85 | 100 |
| 10 | 11 | 11 | 12 | 12 | 65 | 80 | 100 | | 10 | 11 | 11 | 12 | 12 | 65 | 80 | 100 | | 65 | 80 | 100 | - | - | - |
| 10 | 10 | 10 | 12 | 12 | 45 | 75 | 100 | | 10 | 10 | 10 | 12 | 12 | 45 | 75 | 100 | | 45 | 75 | 100 | - | - | - |
| 15000 | | | | | 15000 | | | | 15000 | | | | | 15000 | | | | 15000 | | | | | |
| 12000 | | | | | 12000 | | | | 8000 | | | | | 8000 | | | | 8000 | | | | | |
| 6000 | | | | | 6000 | | | | 4000 | | | | | 4000 | | | | 4000 | | | | | |
| 6000 | | | | | 6000 | | | | 6000 | | | | | 6000 | | | | 6000 | | | | | |
| 3000 | | | | | 3000 | | | | 2000 | | | | | 2000 | | | | 2000 | | | | | |

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|----|----|----|---|---|---|---|---|--|----|----|----|---|---|---|---|---|--|---|---|---|---|---|---|
| 85 | 85 | 85 | - | - | - | - | - | | 85 | 85 | 85 | - | - | - | - | - | | - | - | - | - | - | - |
| 35 | 50 | 65 | - | - | - | - | - | | 35 | 50 | 65 | - | - | - | - | - | | - | - | - | - | - | - |
| 20 | 10 | 20 | - | - | - | - | - | | 20 | 20 | 20 | - | - | - | - | - | | - | - | - | - | - | - |

| | | | | | | | | | | | | | | | | | | | | | | |
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| | |
|-----------------|-----------------|
| 140 x 255 x 110 | 140 x 255 x 110 |
| 185 x 255 x 110 | 185 x 255 x 110 |
| 6.05 | 6.2 |
| 7.90 | 8.13 |

| | |
|------------|------------|
| 45/52.5 mm | 45/52.5 mm |
| 45/70 mm | 45/70 mm |
| 4 x 240 | 4 x 240 |





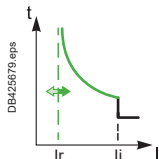
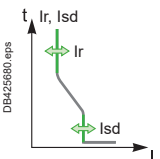
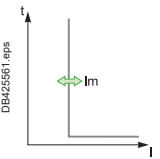
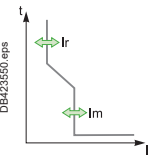
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Select your protection

Overview of trip units

Compact NSXm has a built-in trip unit.

B

| | Compact NSXm up to 160 A | | Compact NSX up to 250 A | |
|-------------------------------------|--|--|---|--|
| |  |  |  |  |
| | TM-D distribution | Micrologic Vigi 4.1 Distribution and earth leakage protection | MA Distribution and motors | TM-D distribution TM-G generators |
| |  |  |  |  |
| Settings & indications | Pick-up set in amps using dials Non-adjustable time delay | | | |
| Front indication | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Test connector | | <input checked="" type="checkbox"/> | | |
| Self test | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Measurements | | | | |
| Amps | | | | |
| Power | | | | |
| Diagnostic & Maintenance | | | | |
| Status indication | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Operating assistance | | | | |
| Control | | | | |
| Voltage release | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Motor mechanism | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Communication | | | | |
| Modbus SL | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Ethernet | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Local display | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Input / Output control | | | | |
| SDx | | <input checked="" type="checkbox"/> | | |
| I/O module | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Earth Leakage | | | | |
| Integrated protection | | <input checked="" type="checkbox"/> | | |
| Vigi Add-on module | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| External relay | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

[1] Only for Micrologic 6 electronic.

[2] Only for Micrologic E.

Select your protection Overview of trip units

Compact NSX offers a range of trip units in interchangeable cases, whether they are magnetic, thermal-magnetic or electronic. Versions 5 and 6 of the electronic trip unit offer communication and metering. Using Micrologic sensors and intelligence, Compact NSX supplies all the information required to manage the electrical installation and optimise energy use.

Compact NSX up to 630 A

| PB10816C_16.eps PB119128_L27.eps Tripunit | PB119163.eps | PB105112_20.eps | PB119164.eps | PB119166.eps |
|---|--|--|---|--|
| Micrologic 2 and 1.3 1.3 M Motors (I only) 2.2/2.3 A Distribution 2.2/2.3 AB Service connection (public distribution) 2.2 G Generators 2.2/2.3 M Motors | Micrologic Vigi 4 4.2/4.3 Distribution and earth leakage protection 4.2/4.3 AB Service connection (public distribution) 4.2/4.3 AL | Micrologic 5 / 6 A 5.2/5.3/6.2/6.3 A Distribution and generators 5.2/5.3 A-Z 16Hz 2/3 networks | Micrologic 5 / 6 E 5.2/5.3/6.2/6.3 E Distribution and generators 6.2/6.3 E-M Motors | Micrologic Vigi 7 E 7.2/7.3 E Distribution and earth leakage protection 7.2/7.3 E AL |
| | | | | |
| Pick-up set in amps using dials Non-adjustable time delay | | | | |
| ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● |
| | | ● | ● | ● |
| ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● |

B

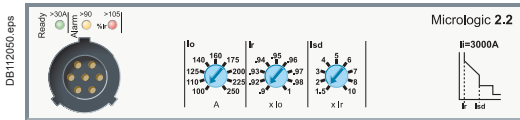
Protection of distribution systems

Compact NSX Micrologic 2 and 1.3 trip units

Micrologic 2 trip units can be used on Compact NSX100 to 630 circuit breakers with performance levels B/F/H/N/S/L/R/HB1/HB2.

They provide:

- standard protection of distribution cables
- indication of:
 - overloads (via LEDs)
 - overload tripping (via the SDx relay module).



SDx remote indication relay module with its terminal block.



Micrologic 2

Circuit breakers equipped with Micrologic 2 trip units can be used to protect distribution systems supplied by transformers. For generators and long cables, Micrologic 2 G trip units offer better suited low pick-up solutions (see page B-50).

Protection

Settings are made using the adjustment dials with fine adjustment possibilities.

Overloads: Long time protection (Ir)

Inverse time protection against overloads with an adjustable current pick-up Ir set using a dial and a non-adjustable time delay tr.

Short-circuits: Short-time protection with fixed time delay (Isd)

Protection with an adjustable pick-up Isd. Tripping takes place after a very short delay used to allow selectivity with the downstream device.

Short-circuits: Non-adjustable instantaneous protection

Instantaneous short-circuit protection with a fixed pick-up.

Neutral protection

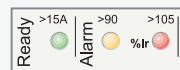
- On 3-pole circuit breakers, neutral protection is not possible.
- On four-pole circuit breakers, neutral protection may be set using a three-position switch:
 - 4P 3D: neutral unprotected
 - 4P 3D + N/2: neutral protection at half the value of the phase pick-up, i.e. 0.5 x Ir
 - 4P 4D: neutral fully protected at Ir.



Indications

Front indications

- Green "Ready" LED: flashes slowly when the circuit breaker is ready to trip in the event of a fault.
- Orange overload pre-alarm LED: steady on when $I > 90\% I_r$.
- Red overload LED: steady on when $I > 105\% I_r$.



Remote indications

An overload trip signal can be remotely installed by installing an SDx relay module inside the circuit breaker. This module receives the signal from the Micrologic electronic trip unit via an optical link and makes it available on the terminal block. The signal is cleared when the circuit breaker is reclosed. For description, see page C-28.

Micrologic 1.3 M for magnetic protection only

Micrologic 1.3 M trip units provide magnetic protection only, using electronic technology. They are dedicated to 400/630 A 3-poles (3P 3D) circuit breakers or 4-pole circuit breakers with detection on 3 poles (4P, 3D) and are used in certain applications to replace switch-disconnectors at the head of switchboards. They are especially used in 3-poles versions for motor protection, see page B-30.

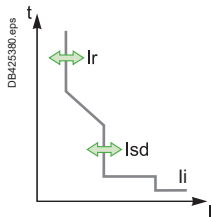
Note: all the trip units have a transparent lead-sealable cover that protects access to the adjustment dials.

Protection of distribution systems

Compact NSX Micrologic 2 and 1.3 trip units

B

Micrologic 2



| Ratings (A) | In at 40 °C [1] | 40 | 100 | 160 | 250 | 400 | 630 |
|-----------------|-----------------|----|-----|-----|-----|-----|-----|
| Circuit breaker | Compact NSX100 | ● | ● | - | - | - | - |
| | Compact NSX160 | ● | ● | ● | - | - | - |
| | Compact NSX250 | ● | ● | ● | ● | - | - |
| | Compact NSX400 | - | - | - | ● | ● | - |
| | Compact NSX630 | - | - | - | ● | ● | ● |

L Long-time protection

Pick-up (A) tripping between 1.05 and 1.20 Ir

| lo | value depending on trip unit rating (In) and setting on dial | | | | | | | | |
|---------------------|--|-----|-----|-----|-----|-----|-----|-----|-----|
| In = 40 A | lo = 18 | 18 | 20 | 23 | 25 | 28 | 32 | 36 | 40 |
| In = 100 A | lo = 40 | 45 | 50 | 55 | 63 | 70 | 80 | 90 | 100 |
| In = 160 A | lo = 63 | 70 | 80 | 90 | 100 | 110 | 125 | 150 | 160 |
| In = 250 A (NSX250) | lo = 100 | 110 | 125 | 140 | 160 | 175 | 200 | 225 | 250 |
| In = 250 A (NSX400) | lo = 70 | 100 | 125 | 140 | 160 | 175 | 200 | 225 | 250 |
| In = 400 A | lo = 160 | 180 | 200 | 230 | 250 | 280 | 320 | 360 | 400 |
| In = 630 A | lo = 250 | 280 | 320 | 350 | 400 | 450 | 500 | 570 | 630 |

| | | |
|-----------------------------------|----------|----------------|
| Time delay (s) accuracy 0 to -20% | tr | non-adjustable |
| | 1.5 x Ir | 400 |
| | 6 x Ir | 16 |
| | 7.2 x Ir | 11 |

Thermal memory 20 minutes before and after tripping

S Short-time protection with fixed time delay

| | | | | | | | | | | |
|----------------------------|--------------------|----------------|---|---|---|---|---|---|---|----|
| Pick-up (A) accuracy ±10 % | Isd = Ir x ... | 1.5 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 10 |
| Time delay (ms) | tsd | non-adjustable | | | | | | | | |
| | Non-tripping time | 20 | | | | | | | | |
| | Maximum break time | 80 ms | | | | | | | | |

I Instantaneous protection

| | | | | | | | |
|----------------------------|--------------------|----------------------|------|------|------|------|------|
| Pick-up (A) accuracy ±15 % | Ii non-adjustable | 600 | 1500 | 2400 | 3000 | 4800 | 6900 |
| | Non-tripping time | 10 ms | | | | | |
| | Maximum break time | 50 ms for I > 1.5 Ii | | | | | |

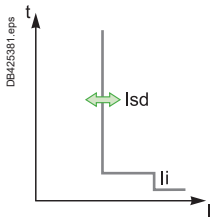
Overbelastnings Beskyttelse

Kortslutnings Beskyttelse

Max bryde tid ved kortslutning

[1] If the trip units are used in high-temperature environments, the Micrologic setting must take into account the thermal limitations of the circuit breaker. See the temperature derating table.

Micrologic 1.3 M



| Ratings (A) | In at 65 °C [1] | 320 | 500 |
|-----------------|-----------------|-----|-----|
| Circuit breaker | Compact NSX400 | ● | - |
| | Compact NSX630 | ● | ● |

S Short-time protection

| | | |
|----------------------------|--------------------|--|
| Pick-up (A) accuracy ±15 % | Isd | Adjustable directly in amps |
| | | 9 settings: 1600, 1920, 2240, 2560, 2880, 3200, 3520, 3840, 4160 A |
| | | 9 settings: 2500, 3000, 3500, 4000, 4500, 5000, 5500, 6000, 6500 A |
| Time delay (ms) | tsd | Non-adjustable |
| | Non-tripping time | 10 |
| | Maximum break time | 60 |

I Instantaneous protection

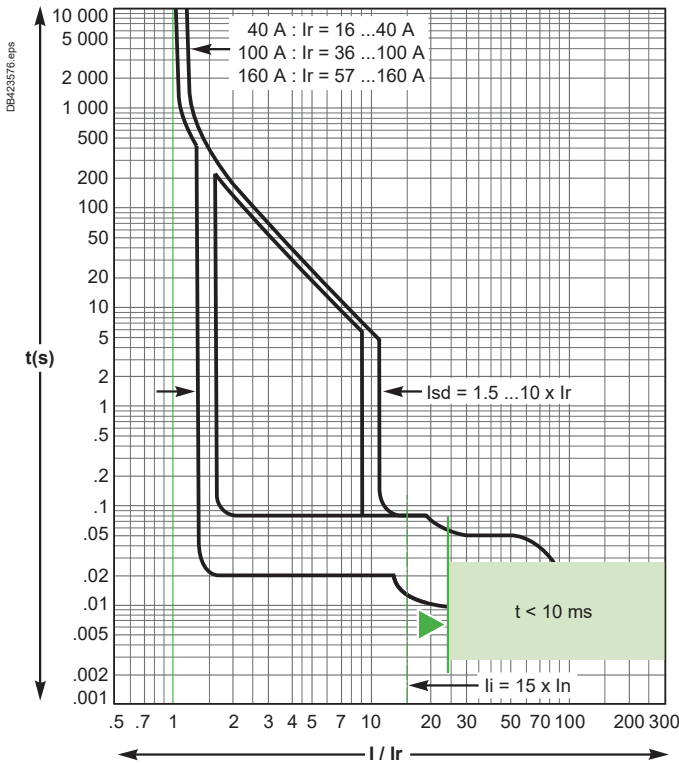
| | | | |
|----------------------------|--------------------|-------|------|
| Pick-up (A) accuracy ±15 % | Ii non-adjustable | 4800 | 6500 |
| | Non-tripping time | 0 | |
| | Maximum break time | 30 ms | |

[1] Motor standards require operation at 65 °C. Circuit-breaker ratings are derated to take this requirement into account.

Compact NSX100 to 250

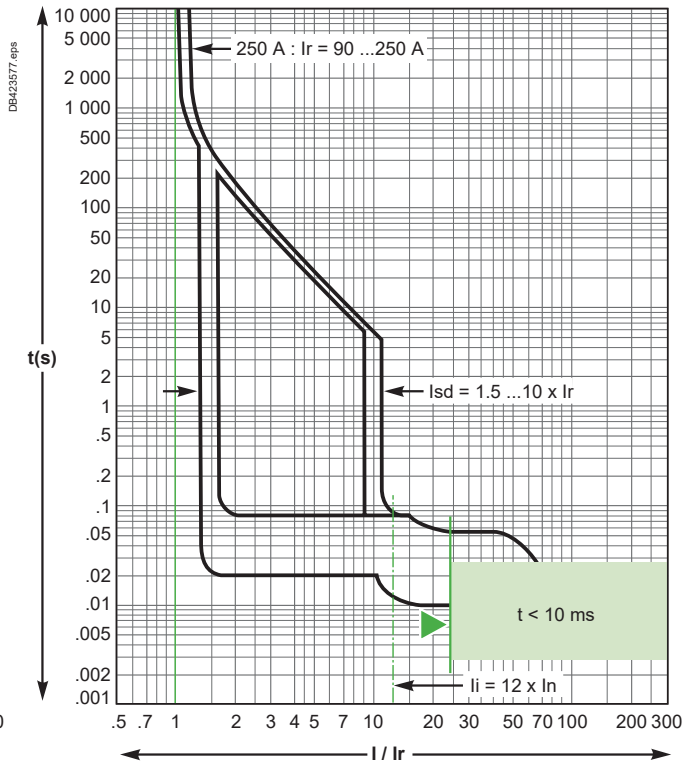
Micrologic 2.2, 4.2 and 2.2 G electronic trip units, tripping curves Protection of distribution systems

Micrologic 2.2, 4.2 - 40... 160 A

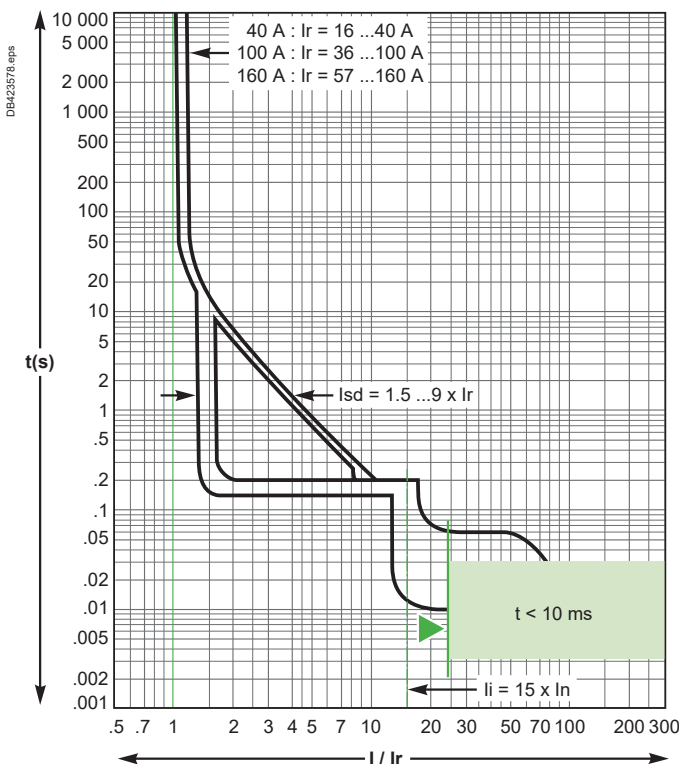


Reflex tripping.

Micrologic 2.2, 4.2 - 250 A

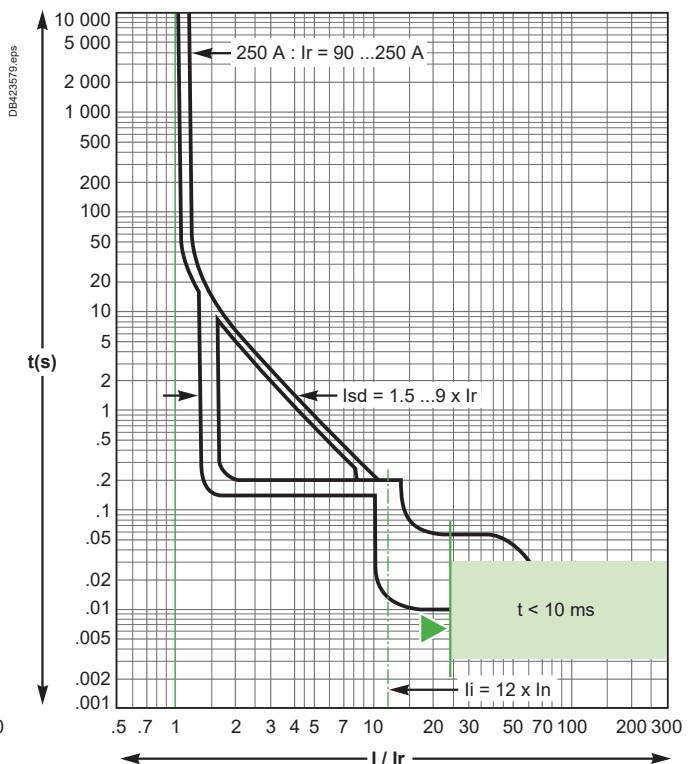


Micrologic 2.2 G - 40... 160 A



Reflex tripping.

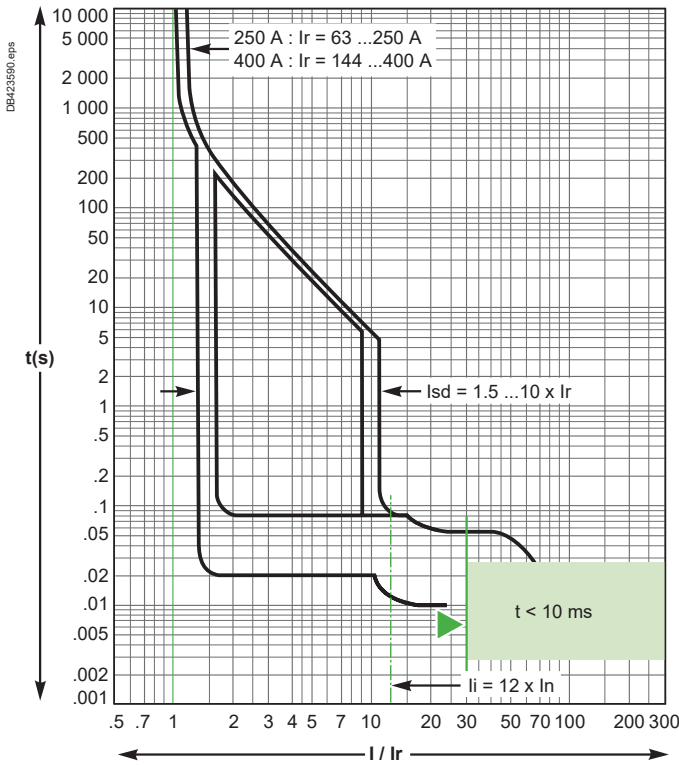
Micrologic 2.2 G - 250 A



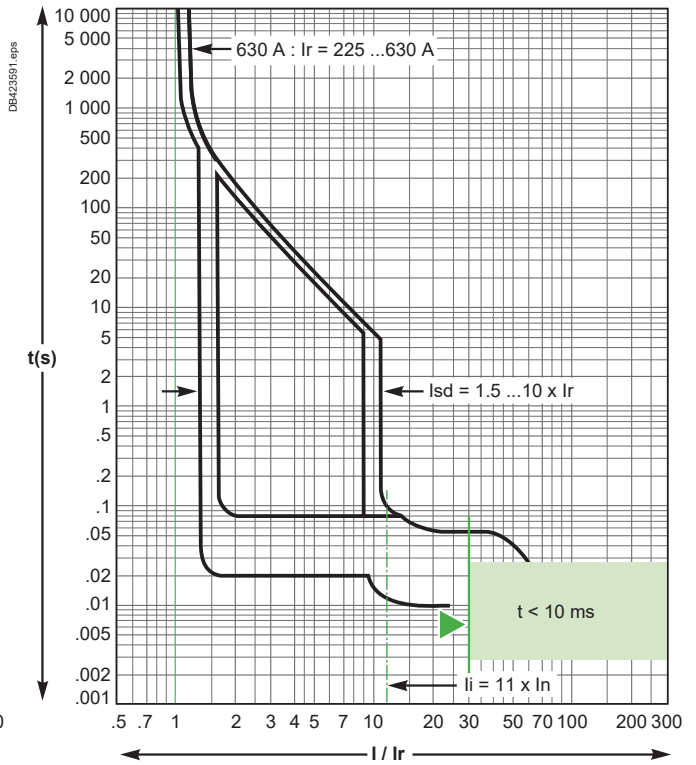
Compact NSX400 to 630

Micrologic 2.3, 4.3, 5.3 and 6.3 A or E and 7.3 E electronic trip units, tripping curves - Protection of distribution systems

Micrologic 2.3, 4.3 - 250... 400 A

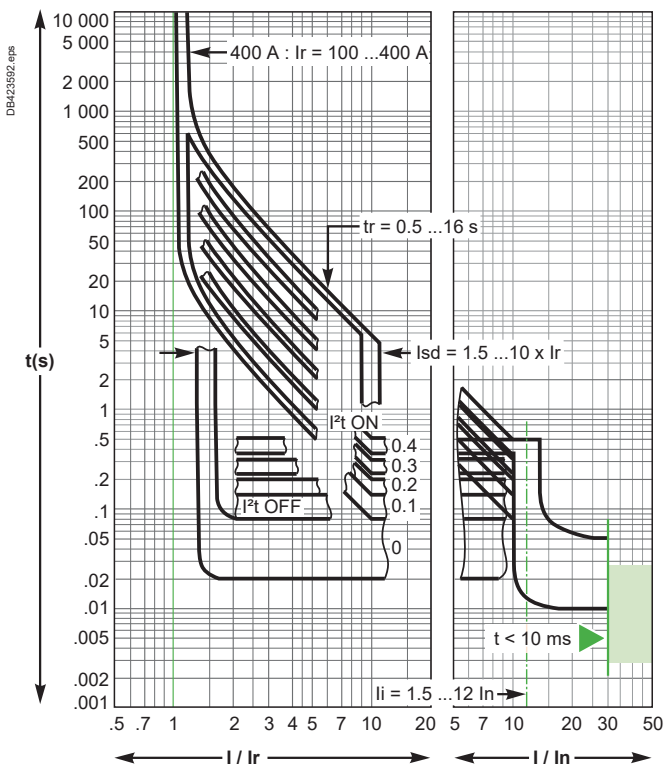


Micrologic 2.3, 4.3 - 630 A

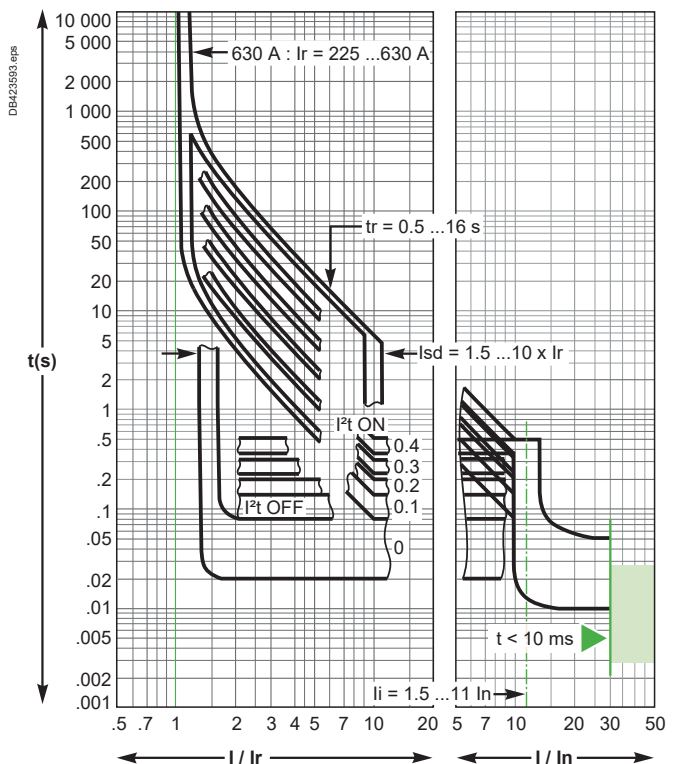


Reflex tripping.

Micrologic 5.3 and 6.3 A or E and 7.3 E - 400 A



Micrologic 5.3 and 6.3 A or E and 7.3E (up to 570 A) - 630 A



Reflex tripping.



Current and energy limiting curves

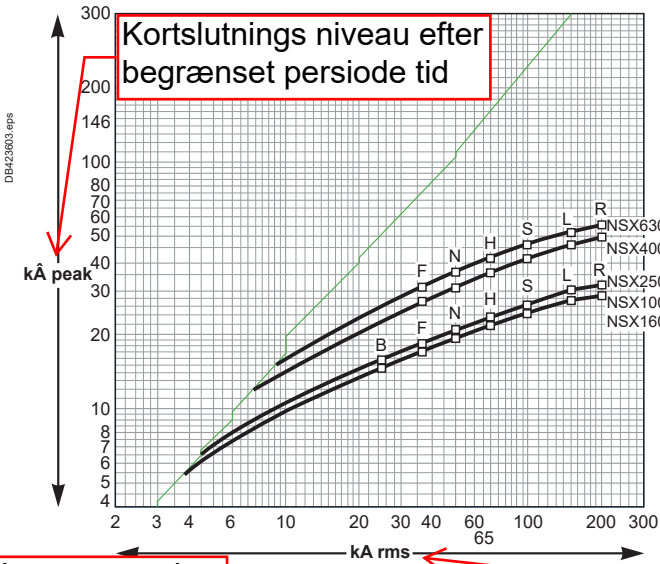
Compact NSX

Kortslutningsniveau nedbringning

Current-limiting curves

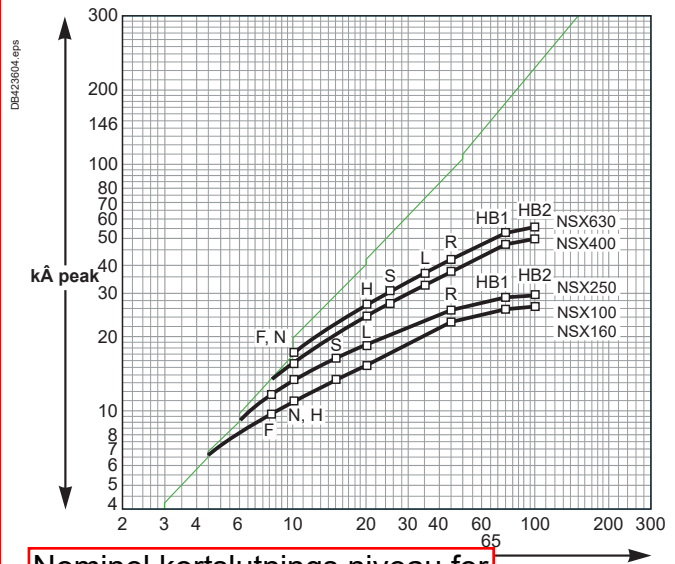
Voltage 400/440 V AC

Limited short-circuit current (kA peak)



Voltage 660/690 V AC

Limited short-circuit current (kA peak)



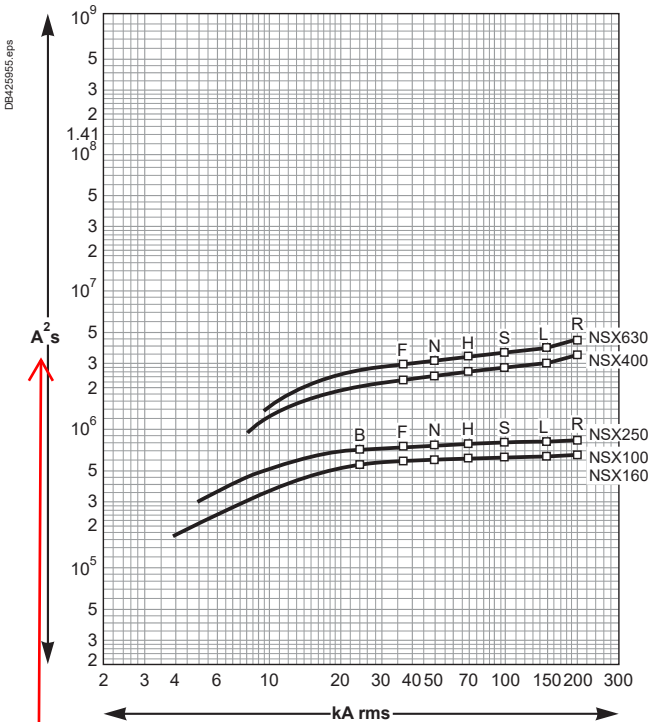
Strømbegrænsende kurve

Nominal kortslutnings niveau for en hel periode tid

Energy-limiting curves

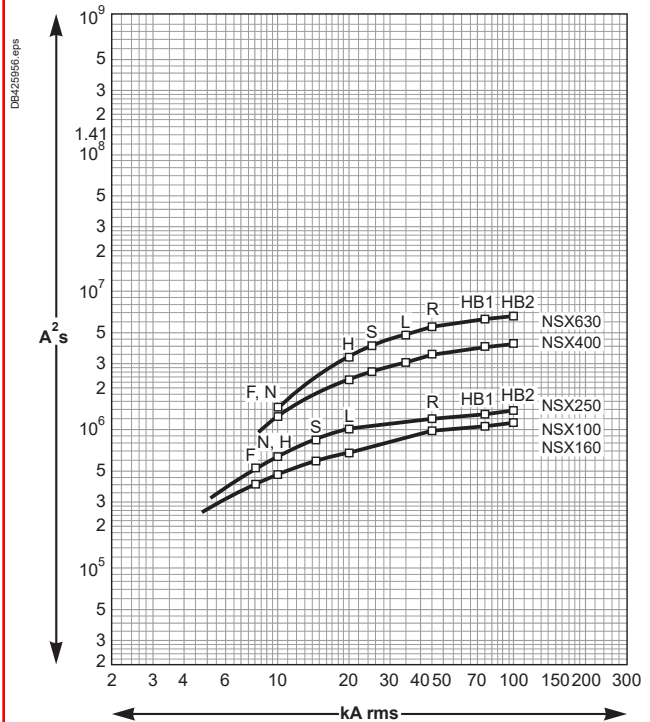
Voltage 400/440 V AC

Limited energy



Voltage 660/690 V AC

Limited energy



Energigennemslip efter strømbegrænsende

Nominal kortslutnings niveau for en hel periode tid

