# Coordination of Surge Protective Devices

## > Design guide

Surge arresters for commercial and industrial buildings

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# Surge protective device coordination

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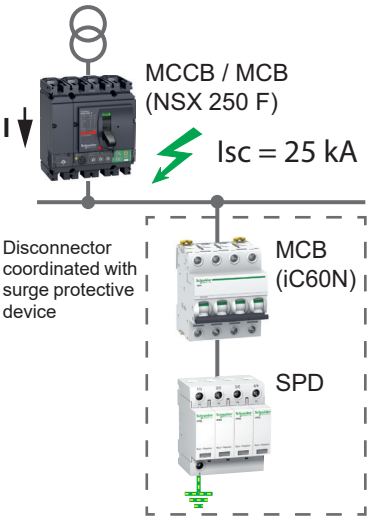
# Surge protective device coordination

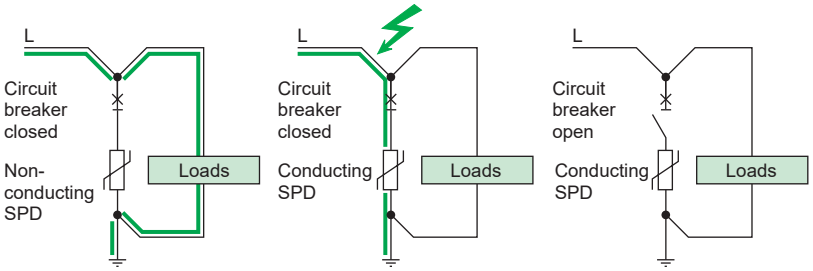
## Coordination between the surge protective device and its associated disconnector




MCCB = Molded-case circuit breaker.
MCB = Modular circuit breaker.
SPD = Surge protective device.

### IEC 61643-11:2011
### EN 61643-11:2012+A11:2018

As per the above standards:
An external diconnector has to be coordinated with a surge protective device in order to achieve:
- ■ continuity of service:
  - □ to not trip due to surge current,
  - □ to not increase (Up) voltage protection level.
- ■ effective protection against all types of overcurrents:
  - □ overload due to SPD aging,
  - □ short-circuit of low intensity (impedant) due to temporary overvoltages,
  - □ short-circuit of high intensity due to SPD degradation.




**Surge protective device in normal operation**

**Surge protective device in operation during the lightning stroke**

**Surge protective device at end of life on short-circuit**

The disconnector has to be coordinated with the surge protective device. It is designed to meet the following two constraints:

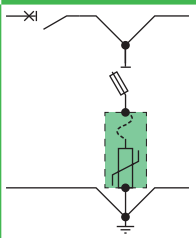
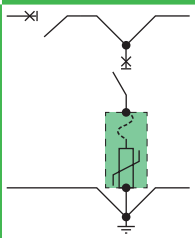
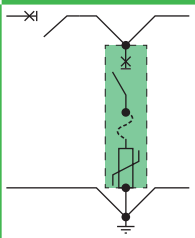
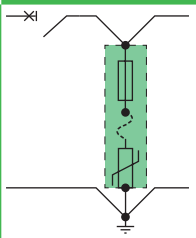
### Withstand lightning current

Withstand lightning current is one of the main characteristics of the surge protective device's external disconnector.
The device has to be capable of passing the following standardized tests: not trip upon 15 successive impulse currents at In.

### Withstand short-circuit current

**The breaking capacity is determined by the installation rules (IEC 60364 standard):**
- ■ the external disconnector has to have a breaking capacity equal to or greater than the presumed short-circuit current Isc at the point of installation.
- ■ when this device is integrated into the surge protective device, conformity with product standard IEC 61643-11 provides protection.

# Surge protective device coordination (cont.)

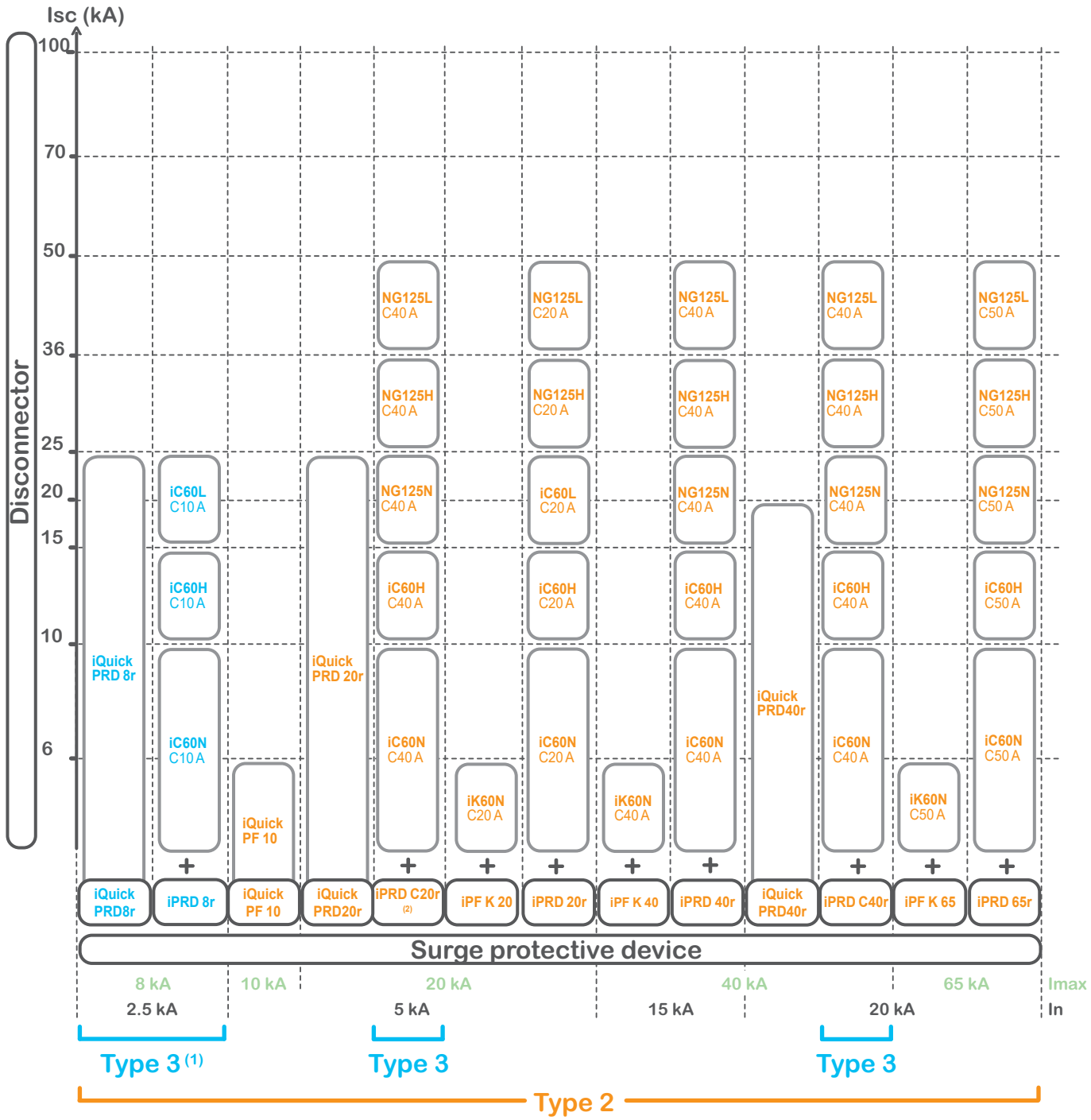
| | | | | |
|---|---|---|---|---|
| |  Acti9 SBI fuse disconnector +  Acti9 iPRD |  Acti9 iC60 +  Acti9 iPRD |  Acti9 iQuick PRD |  Acti9 iPRD F20r, F40r |
| **External disconnector** | **Fuse protection combined with the SPD** | **Circuit breaker protection combined with the SPD** | **Circuit breaker protection integrated into the SPD** | **Fuse protection integrated into the SPD** |
| |  |  |  |  |
| **Lightning protection of equipment** | = | = | = | = |
| | All types of disconnectors protect the equipment satisfactorily | | | |
| **Protection of installation (at end of the surge protective device's life)** | = | + | ++ | ++ |
| | Achieved if compliance with the MCB/SPD coordination table | | Achieved during product design | |
| | Protection from (impedant) short-circuits of low intensity not well ensured | Protection against (impedant) short-circuits of low intensity | | |
| **Continuity of service (at end of the surge protective device's life)** | + | + | + | + |
| | Only the surge protective device circuit is shut down | | | |
| **Maintenance (at end of the surge protective device's life)** | = | + | + | + |
| | Change of fuse(s) | Immediate resetting | | |

Main reasons why the disconnector recommended by the manufacturer has to be used:
- if the disconnector's rating is lower than the recommended rating: risk of the disconnector opening in normal operation.
- if the disconnector's rating is higher than the recommended rating: there is a risk of short-circuit at the end of life of the SPD. The high-rated disconnector is letting through too much energy.

# Surge protective device coordination (cont.)

## Coordination between the **surge protective device Type 2 and Type 3** and its associated **circuit breaker** type disconnector in the event of a short-circuit

This table shows: the rating, curve and short-circuit current level of the disconnector coordinated with the surge protective device.

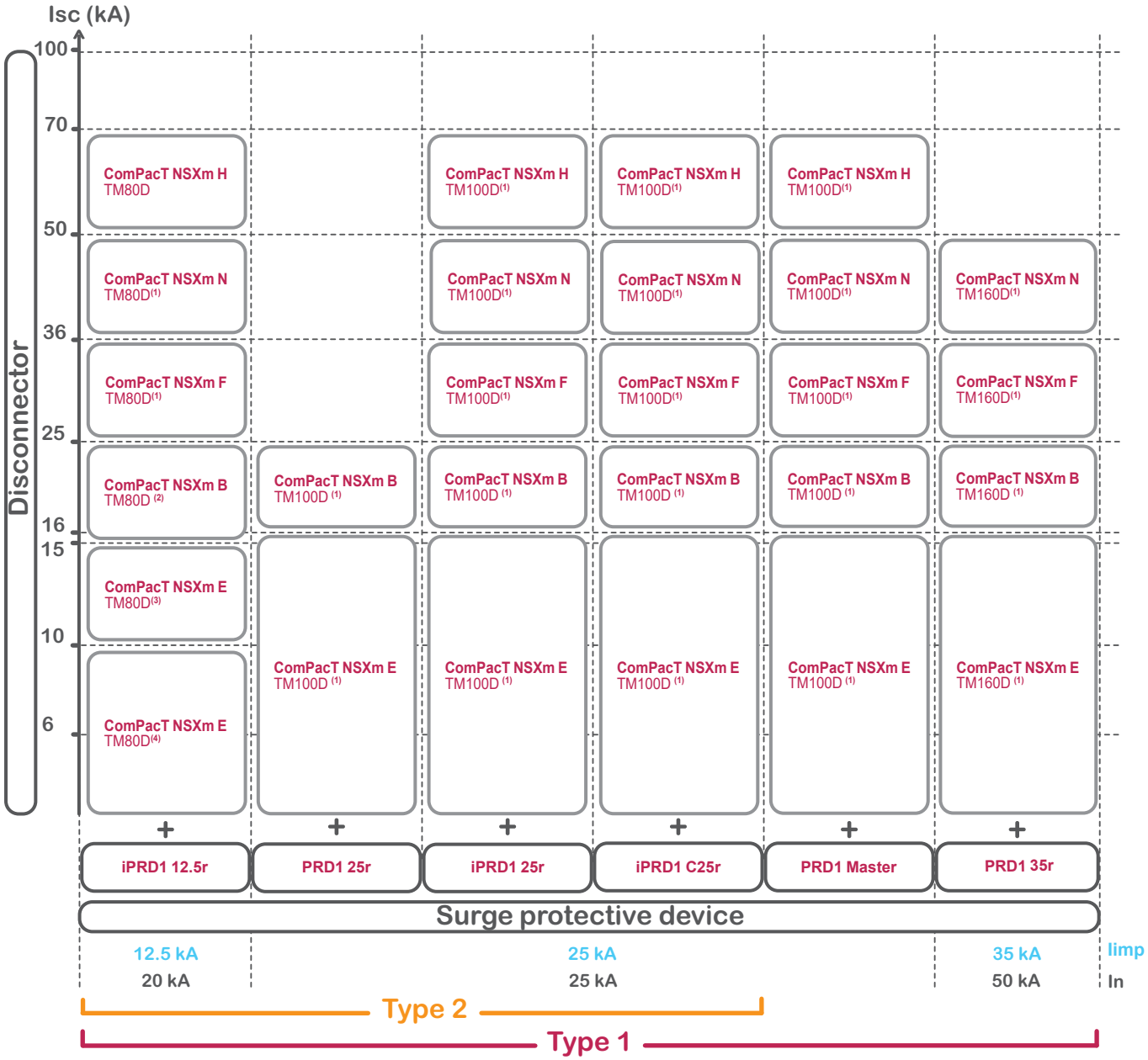



(1): Tested and validated by Schneider Electric for performance Type 3
(2): Certified up to Isc = 25 kA

# Surge protective device coordination (cont.)

## Coordination between the **surge protective device Type 1** and its associated **circuit breaker** type disconnector in the event of a short-circuit

This table shows: the rating, curve and short-circuit current level of the disconnector coordinated with the surge protective device.




(1): Equivalence table ComPacT NSXm - ComPacT NSX100 / NSX160
(2): For all applications where the Type 1 current wave (10/350 µs) ⩽ 10 kA [Iimp ⩽ 10 kA], the Acti9 NG125N C80 A can be used
(3): For all applications where the Type 1 current wave (10/350 µs) ⩽ 10 kA [Iimp ⩽ 10 kA], the Acti9 C120H C80 A can be used
(4): For all applications where the Type 1 current wave (10/350 µs) ⩽ 10 kA [Iimp ⩽ 10 kA], the Acti9 C120N C80 A can be used

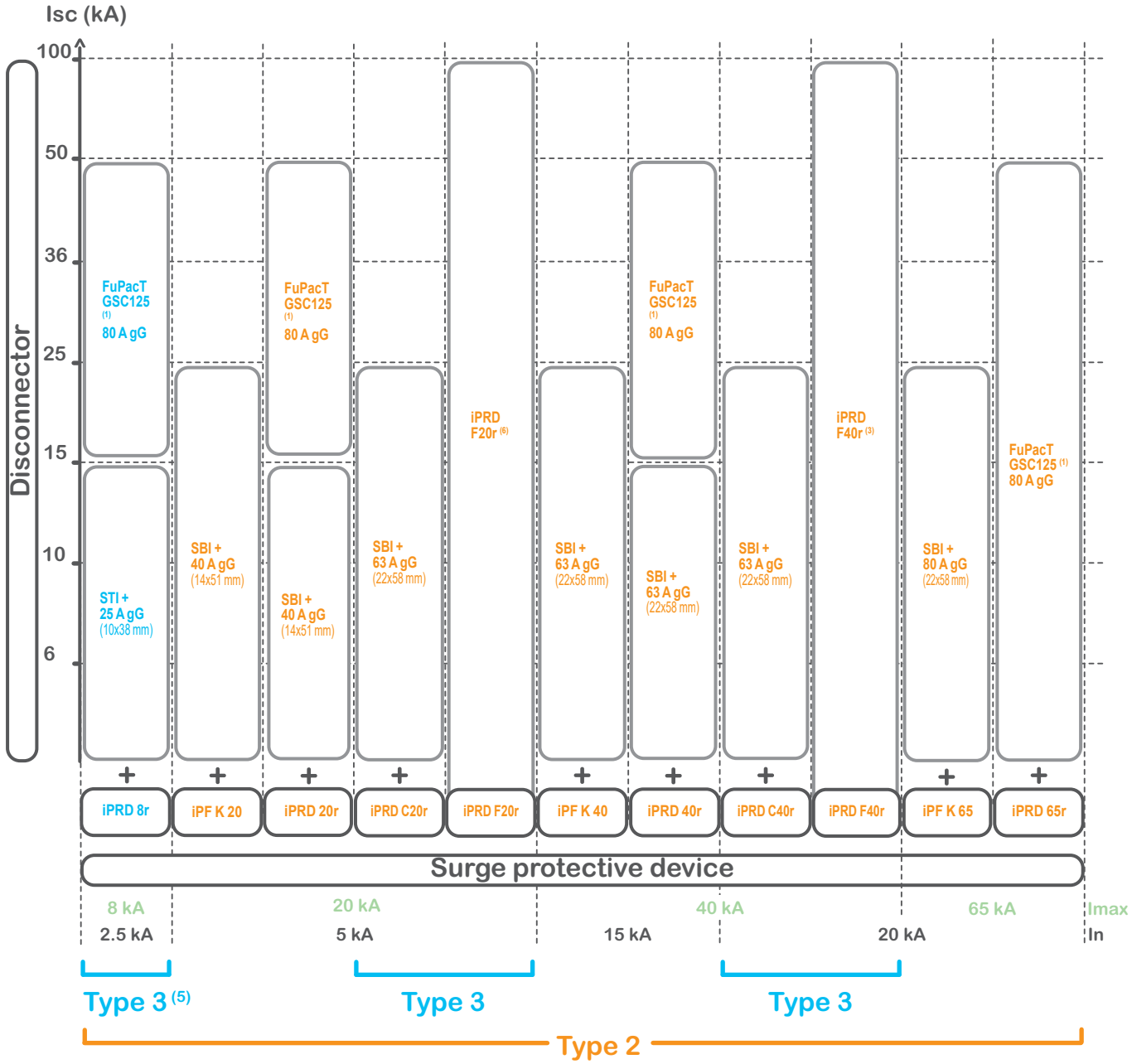
| NSXm | NSX |
|---|---|
| NSXm F TM80D | NSX100 F TM100D |
| NSXm N TM80D | NSX100 N TM100D |

| NSXm | NSX |
|---|---|
| NSXm B TM100D | NSX100 B TM100D |
| NSXm E TM100D | NSX100 B TM100D |
| NSXm F TM100D | NSX100 F TM100D |
| NSXm N TM100D | NSX100 N TM100D |
| NSXm H TM100D | - |

| NSXm | NSX |
|---|---|
| NSXm B TM160D | NSX160 |
| NSXm E TM160D | NSX160 |
| NSXm F TM160D | NSX160 |
| NSXm N TM160D | NSX160 |

# Surge protective device coordination (cont.)

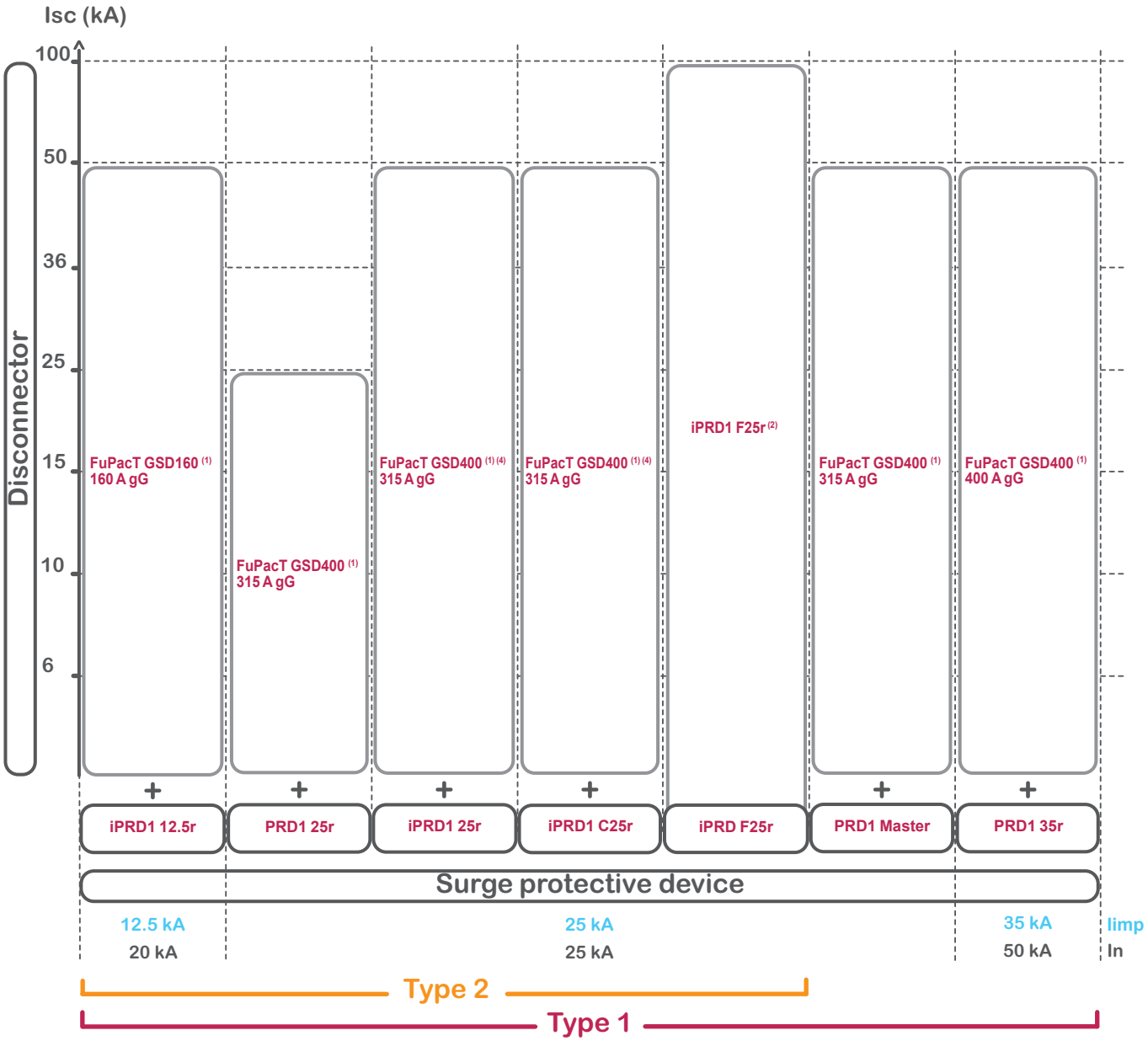
## Coordination between the **surge protective device Type 2 and Type 3** and its associated **fuse** type disconnector in the event of a short-circuit




(1): GSC and GSD are fuse switch disconnectors for DIN and NFC fuse. You can use BS fuse inside GSB fuse switch disconnector (cf catalog LVPED216031EN)
(3): Total Selectivity if the upstream fuse ⩾ 63 A ; tested and validated up to Isc = 100 kA
(5): Tested and validated by Schneider Electric for performance Type 3
(6): Total Selectivity if the upstream fuse ⩾ 63 A ; tested and validated up to Isc = 100 kA ; certified up to Isc = 25 kA

# Surge protective device coordination (cont.)

## Coordination between the **surge protective device Type 1** and its associated **fuse** type disconnector in the event of a short-circuit

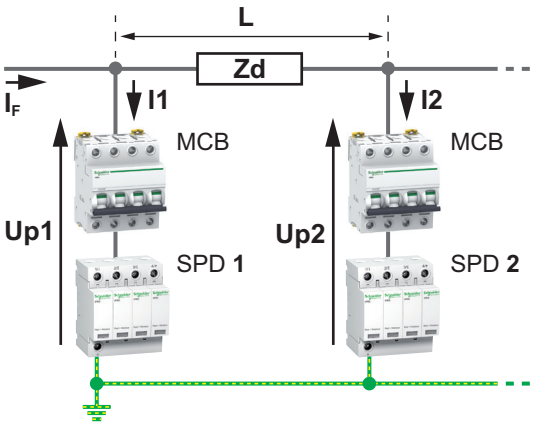



(1): GSC and GSD are fuse switch disconnectors for DIN and NFC fuse. You can use BS fuse inside GSB fuse switch disconnector (cf catalog LVPED216031EN)
(2): Total Selectivity if the upstream fuse ⩾ 315 A ; declared for Isc = 75 kA, tested and validated up to Isc = 100 kA (declaration of conformity on request)
(4): Total Selectivity if the upstream fuse ⩽ 315 A. If upstream fuse > 315 A, use 315 A gG fuse for disconnector

# Surge protective device coordination (cont.)

## Coordination between two surge protective devices, upstream/downstream

When two surge protective devices are installed in an electrical installation, coordination is needed according to IEC 61643-12 to obtain an acceptable stress distribution between the two surge protective devices according to their permissible energy "E".




| | |
|---|---|
| L and Zd | represent the cable length and impedance respectively between the 2 surge protective devices. |
| Up2: | level of protection of surge protective device SPD2. |
| Uw: | impulse withstand voltage of the equipment to be protected. |
| Imax: | maximum discharge current. |
| $I_F$: | lightning current:<br>⩽ Imax of SPD1<br>= I1 + I2 |
| E: | permissible energy. |
| MCB: | modular circuit breaker. |
| SPD: | surge protective device. |

For coordination between two surge protective devices, a minimum cable length between these 2 surge protective devices is needed to ensure that:

- **I2** < Imax SPD2.
- **Up2** < Uw.
- **E2** < E max SPD2.

# Surge protective device coordination (cont.)

## Minimum distance between two surge protective devices, upstream/downstream

For a cable section of 16 mm² and an impulse current equal to the maximum discharge current (Imax) of the upstream surge protective device.

**Example**
If iPRD65r is installed in the incoming panelboard, the second SPD iPRD8r has to be installed at a cable length of 8 meters from the first one.

**Upstream surge protective device**

Type 1 | Type 2 | Type 3 | Type 3

| Downstream surge protective device | In | Imax | Iimp | iQuick PRD 20r | iPRD 20r | iPRD C20r | iPRD F20r | iPRD 40r | iQuick PRD 40r | iPRD C40r | iPRD F40r | iPRD 65r | iPRD1 12.5r | PRD1 25r | iPRD1 25r | iPRD1 C25r | iPRD1 F25r | PRD1 Master |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 5 kA | | | | 15 kA | 20 kA | | | 20 kA | 20 kA | 25 kA | | | | |
| | | | | 20 kA | | | | 40 kA | | | | 65 kA | 50 kA | 40 kA | 65 kA | | | |
| | | | | | | | | | | | | | 12.5 kA | | 25 kA | | | |
| Type 2 | 20 kA | 65 kA | iPRD 65r | | | | | | | | | 0 m | 10 m | 10 m | 1 m | 1 m | 0.5 m | 10 m |
| Type 3 | 20 kA | 40 kA | iPRD F40r | | | | | | 0 m | 0 m | 0 m | | | | 0 m | 0 m | 0 m | |
| | | | iPRD C40r | | | | | | 0 m | 0 m | 0 m | | | | 1 m | 0 m | 0 m | |
| | | | iQuick PRD 40r | | | | | 0 m | 0 m | 0 m | 0 m | 2 m | 10 m | 10 m | 1 m | 1 m | 1 m | 10 m |
| | 15 kA | | iPRD 40r | | | | | 0 m | 0 m | 5 m | 3 m | 2 m | 10 m | 10 m | 1 m | 1 m | 0.5 m | 10 m |
| Type 2 | 5 kA | 20 kA | iPRD F20r | 0 m | 0 m | 0 m | 0 m | | 0 m | 0 m | 0 m | | | | 0 m | 0 m | 0 m | |
| Type 3 | | | iPRD C20r | 0 m | 0 m | 0 m | 0 m | | 0 m | 0 m | 0 m | | | | 1 m | 0 m | 0 m | |
| | | | iPRD 20r | 0 m | 0 m | 0 m | 0 m | 3 m | 2 m | 5 m | 3 m | 2 m | 10 m | 10 m | 1 m | 1 m | 0.5 m | |
| | | | iQuick PRD 20r | 0 m | 0 m | 0 m | 0 m | 2 m | 1 m | 5 m | 3 m | 2 m | 10 m | 10 m | 2.5 m | 1 m | 1 m | |
| Type 3 (1) | 2.5 kA | 8 kA | iPRD 8r | 3 m | 4 m | 5 m | 2 m | 9 m | 7 m | 5 m | 2 m | 8 m | 10 m | 10 m | 1 m | 1 m | 0.5 m | |
| | | | iQuick PRD 8r | 2 m | 4 m | 5 m | 2 m | 7 m | 6 m | 5 m | 2 m | 7 m | 10 m | 10 m | 5 m | 5 m | 5 m | |

Note:
Not valid configuration
(1): Tested and validated by Schneider Electric for performance Type 3

# Surge protective device coordination (cont.)

## Cascading in the event of a short-circuit between the SPD disconnector and the upstream circuit breaker

### What is cascading?

Cascading is a coordination method that uses the breaking and limiting capability of an upstream circuit breaker to allow the installation of downstream devices with lower short-circuit performance ratings.
This allows that downstream breakers operate under normal breaking conditions, even in the event of a high short-circuit current.

Benefits:
- Reduces installation costs,
- Optimizes protection without oversizing all devices.

Cascading calculations are based on manufacturer-tested combinations and can involve two or three devices in series, depending on the configuration.

### What is selectivity?

Selectivity is the ability of protective devices to isolate only the part of the installation affected by a fault.
In practice, this means that only the circuit breaker immediately upstream of the fault trips, while other breakers remain closed, allowing continuity of service for the rest of the installation.

Objective: Limit the impact of electrical faults and maintain power supply to unaffected circuits.

### Why is this important for SPD installations?

Proper coordination with the upstream circuit breaker is essential to:
- Avoid nuisance tripping of the main breaker,
- Allow disconnection of the SPD without compromising the rest of the installation,
- Maintain continuity of service wherever possible.

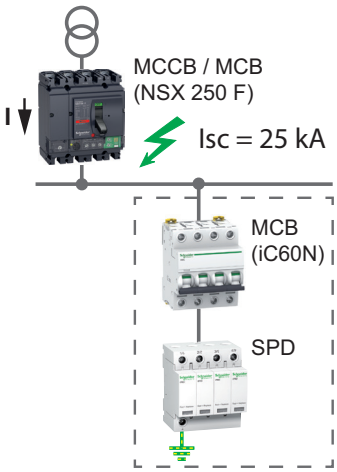
### What is selectivity enhanced by cascading?

At Schneider Electric, solutions are designed to combine selectivity and cascading for optimal protection and continuity of supply.
This approach, called selectivity enhanced by cascading, provides:
- Better coordination between protective devices,
- Continuity of service even in case of surge arrester end of life,
- Cost optimization through correct device sizing.

### Reference for coordination values

To identify cascading and selectivity values between circuit breakers (including SPD coordination), refer to:
**Selectivity, Cascading and Coordination Guide** (LVPED318033EN)

# Surge protective device coordination (cont.)




MCCB = Molded-case circuit breaker.
MCB = Modular circuit breaker.
SPD = Surge protective device.

## Case 1

### Disconnector not integrated into the surge protective device.

For this type of study:
> refer to Selectivity, Cascading and Coordination Guide (LVPED318033EN)

> or contact Schneider Electric Customer Care Center.

## Cascading

| Upstream | NG125 | | | NSXm160 | | | | | NSX100 | | | | | | NSX160 | | | | | | NSX250 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | H | L | E | B | F | N | H | B | F | N | H | S | L | B | F | N | H | S | L | B | F | N | H | S | L |
| Breaking capacity Icu (kA) | 25 | 36 | 50 | 16 | 25 | 36 | 50 | 70 | 25 | 36 | 50 | 70 | 100 | 150 | 25 | 36 | 50 | 70 | 100 | 150 | 25 | 36 | 50 | 70 | 100 | 150 |

| Downstream SPD | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Icu (kA) | Reinforced breaking capacity (kA) according to IEC/EN 60947-2 Annex A | | | | | | | | | | | | | | | | | | | | | | | | |
| iC60N C10A | 10 | 25 | 25 | 25 | 16 | 20 | 25 | 30 | 30 | 20 | 25 | 30 | 30 | 30 | 30 | 20 | 25 | 30 | 30 | 30 | 30 | 20 | 25 | 30 | 30 | 30 | 30 |
| iC60H C10A | 15 | 25 | 36 | 36 | 16 | 20 | 36 | 36 | 36 | 25 | 36 | 40 | 40 | 40 | 40 | 25 | 36 | 40 | 40 | 40 | 40 | 25 | 30 | 30 | 30 | 30 | 40 |
| iC60L C10A | 25 | | 36 | 50 | | | 36 | 36 | 36 | | 36 | 40 | 40 | 40 | 40 | | 36 | 40 | 40 | 40 | 40 | | 30 | 30 | 30 | 30 | 40 |
| iC60N C20A | 10 | 25 | 25 | 25 | 16 | 20 | 25 | 30 | 30 | 20 | 25 | 30 | 30 | 30 | 30 | 20 | 25 | 30 | 30 | 30 | 30 | 20 | 25 | 30 | 30 | 30 | 30 |
| iC60H C20A | 15 | 25 | 36 | 36 | 16 | 20 | 36 | 36 | 36 | 25 | 36 | 40 | 40 | 40 | 40 | 25 | 36 | 40 | 40 | 40 | 40 | 25 | 30 | 30 | 30 | 30 | 40 |
| iC60L C20A | 25 | | 36 | 50 | | | 36 | 36 | 36 | | 36 | 40 | 40 | 40 | 40 | | 36 | 40 | 40 | 40 | 40 | | 30 | 30 | 30 | 30 | 40 |
| iC60N C40A | 10 | 25 | 25 | 25 | 16 | 20 | 25 | 30 | 30 | 20 | 25 | 30 | 30 | 30 | 30 | 20 | 25 | 30 | 30 | 30 | 30 | 20 | 25 | 30 | 30 | 30 | 30 |
| iC60H C40A | 15 | 25 | 36 | 36 | 16 | 20 | 36 | 36 | 36 | 25 | 36 | 40 | 40 | 40 | 40 | 25 | 36 | 40 | 40 | 40 | 40 | 25 | 30 | 30 | 30 | 30 | 40 |
| iC60N C50A | 10 | 25 | 25 | 25 | 16 | 20 | 25 | 30 | 30 | 20 | 25 | 30 | 30 | 30 | 30 | 20 | 25 | 30 | 30 | 30 | 30 | 20 | 25 | 25 | 25 | 25 | 30 |
| iC60H C50A | 15 | 25 | 36 | 36 | 16 | 20 | 36 | 36 | 36 | 25 | 36 | 40 | 40 | 40 | 40 | 25 | 36 | 36 | 36 | 36 | 36 | 25 | 25 | 25 | 25 | 25 | 36 |
| NG125H C20A | 36 | | | 50 | | | | 40 | 50 | | | 40 | 50 | 70 | 100 | | | 40 | 50 | 70 | 100 | | | 40 | 50 | 70 | 100 |
| NG125L C20A | 50 | | | | | | | | 70 | | | | 70 | 100 | 150 | | | | 70 | 100 | 150 | | | | 70 | 100 | 150 |
| NG125N C40A | 25 | | 36 | 50 | | | 36 | 36 | 36 | | 36 | 36 | 36 | 50 | 70 | | 36 | 36 | 36 | 50 | 70 | | 36 | 36 | 36 | 50 | 70 |
| NG125H C40A | 36 | | | 50 | | | | 40 | 50 | | | 40 | 50 | 70 | 100 | | | 40 | 50 | 70 | 100 | | | 40 | 50 | 70 | 100 |
| NG125L C40A | 50 | | | | | | | | 70 | | | | 70 | 100 | 150 | | | | 70 | 100 | 150 | | | | 70 | 100 | 150 |
| NG125N C50A | 25 | | 36 | 50 | | | 36 | 36 | 36 | | 36 | 36 | 36 | 50 | 70 | | 36 | 36 | 36 | 50 | 70 | | 36 | 36 | 36 | 50 | 70 |
| NG125H C50A | 36 | | | 50 | | | | 40 | 50 | | | 40 | 50 | 70 | 100 | | | 40 | 50 | 70 | 100 | | | 40 | 50 | 70 | 100 |
| NG125L C50A | 50 | | | | | | | | 70 | | | | 70 | 100 | 150 | | | | 70 | 100 | 150 | | | | 70 | 100 | 150 |

# Selectivity

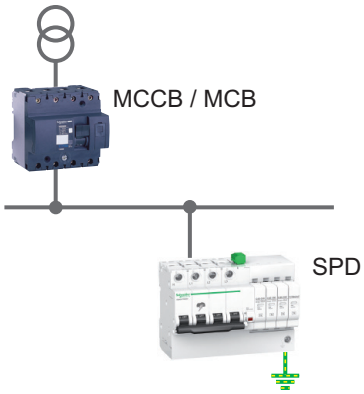
| Upstream | NSXm | | | | | | | NSX F/N/H/L | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trip unit | TMD | | | | | | | TMD | | | | | | | | | |
| Rating In (A) | 40 | 50 | 63 | 80 | 100 | 125 | 160 | 40 | 50 | 63 | 80 | 100 | 125 | 160 | 200 | 250 | > 250 |
| **Downstream SPD** | | | | | | | | | | | | | | | | | |
| | Selectivity limit (kA) | | | | | | | | | | | | | | | | |
| **iC60N/H/L C10A** | 0.5 | 0.6 | 0.8 | T | T | T | T | 0.5 | 0.5 | 0.5 | 1 | 2 | T | T | T | T | T |
| **iC60N/H/L C20A** | 0.5 | 0.6 | 0.8 | T | T | T | T | 0.5 | 0.5 | 0.5 | 0.63 | 1.5 | T | T | T | T | T |
| **iC60N/H C40A** | | | | 2 | T | T | T | | | 0.5 | 0.63 | 1 | T | T | T | T | T |
| **iC60N/H C50A** | | | | | 6 | 8 | 8 | | | | 0.63 | 0.8 | T | T | T | T | T |
| **NG125H/L C20A** | 0.6 | 0.6 | 0.8 | 0.8 | 1 | 1.25 | 1.25 | 0.5 | 0.5 | 0.5 | 0.63 | 0.8 | T | T | T | T | T |
| **NG125N/H/L C40A** | | | | 0.8 | 1 | 1.25 | 1.25 | | | | 0.63 | 0.8 | 2.4 | 2.4 | 2.4 | T | T |
| **NG125N/H/L C50A** | | | | 0.8 | 1 | 1.25 | 1.25 | | | | 0.63 | 0.8 | 2.5 | 2.5 | 2.5 | T | T |

| Upstream | NSXm | | | | | | | NSX F/N/H/L | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trip unit | Micrologic (1) | | | | | | | Micrologic (2) | | | | | | | | | |
| Rating In (A) | 40 | 50 | 63 | 80 | 100 | 125 | 160 | 40 | 50 | 63 | 80 | 100 | 125 | 160 | 200 | 250 | > 250 |
| **Downstream SPD** | | | | | | | | | | | | | | | | | |
| | Selectivity limit (kA) | | | | | | | | | | | | | | | | |
| **iC60N/H/L C10A** | 1.5 | 1.5 | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T |
| **iC60N/H/L C20A** | 0.75 | 0.75 | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T |
| **iC60N/H C40A** | | | | T | T | T | T | | | T | T | T | T | T | T | T | T |
| **iC60N/H C50A** | | | | | 8 | 8 | 8 | | | | 6 (3) | 6 (3) | T | T | T | T | T |
| **NG125H/L C20A** | 0.75 | 0.75 | 1.5 | 1.5 | 1.5 | 2.4 | 2.4 | 0.6 | 1.5 | 1.5 | 1.5 (3) | 1.5 (3) | T | T | T | T | T |
| **NG125N/H/L C40A** | | | | 1.5 | 1.5 | 2.4 | 2.4 | | | | 1.5 (4) | 1.5 (4) | 2.4 | 2.4 | T | T | T |
| **NG125N/H/L C50A** | | | | 1.5 | 1.5 | 2.4 | 2.4 | | | | | 1.5 (4) | 2.4 | 2.4 | T | T | T |

(1): Micrologic 4.1
(2): Micrologic and Micrologic AB
(3): Total selectivity if ComPacT NSX160
(4): 2.4 kA if ComPacT NSX160

| | |
|---|---|
| 0.8 | Selectivity limit = 0.8 kA. |
| T | Total selectivity. |
| | No selectivity. |

# Surge protective device coordination (cont.)




## Case 2

**Disconnector integrated into the surge protective device.**

MCCB = Molded-case circuit breaker.
MCB = Modular circuit breaker.
SPD = Surge protective device with integrated disconnector (fuse or MCB)

## Cascading

| Upstream | NG125 | | NSXm160 | | | | | NSX100 | | | | | | NSX160 | | | | | | NSX250 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | H | L | E | B | F | N | H | B | F | N | H | S | L | B | F | N | H | S | L | B | F | N | H | S | L |
| Breaking capacity Icu (kA) | 36 | 50 | 16 | 25 | 36 | 50 | 70 | 25 | 36 | 50 | 70 | 100 | 150 | 25 | 36 | 50 | 70 | 100 | 150 | 25 | 36 | 50 | 70 | 100 | 150 |

| Downstream SPD | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Icu (kA) | Reinforced breaking capacity (kA) according to IEC/EN 60947-2 Annex A | | | | | | | | | | | | | | | | | | | | | | | |
| iQuick PF10 | 6 | 16 | 16 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| iQuick PRD8r | 25 | 36 | 50 | | | 36 | 36 | 36 | | 30 | 40 | 40 | 40 | 40 | | 30 | 30 | 30 | 30 | 30 | | 30 | 30 | 30 | 30 | 30 |
| iQuick PRD20r | 25 | 36 | 50 | | | 36 | 36 | 36 | | 30 | 40 | 40 | 40 | 40 | | 30 | 30 | 30 | 30 | 30 | | 30 | 30 | 30 | 30 | 30 |
| iQuick PRD40r | 20 | 36 | 50 | | | 36 | 36 | 36 | | 30 | 40 | 40 | 40 | 40 | | 30 | 30 | 30 | 30 | 30 | | 30 | 30 | 30 | 30 | 30 |

## Selectivity

| Upstream | NSXm | | | | | | | NSX F/N/H/L | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trip unit | TMD | | | | | | | TMD | | | | | | | | | |
| Rating In (A) | 40 | 50 | 63 | 80 | 100 | 125 | 160 | 40 | 50 | 63 | 80 | 100 | 125 | 160 | 200 | 250 | > 250 |
| **Downstream SPD** | | | | | | | | | | | | | | | | | |
| | Selectivity limit (kA) | | | | | | | | | | | | | | | | |
| iPRD F20r | | | | | | T | T | | | | | | T | T | T | T | T |
| IPRD F40r | | | | | | T | T | | | | | | T | T | T | T | T |
| iQuick PF10 | 0.5 | 0.6 | 0.8 | 10 | T | T | T | 0.5 | 0.5 | 0.5 | 0.63 | 0.8 | T | T | T | T | T |
| iQuick PRD8r | | 0.6 | 0.8 | 10 | T | T | T | 0.5 | 0.5 | 0.5 | 0.63 | 0.8 | T | T | T | T | T |
| iQuick PRD20r | | 0.6 | 0.8 | 10 | T | T | T | 0.5 | 0.5 | 0.5 | 0.63 | 0.8 | T | T | T | T | T |
| iQuick PRD40r | | | 0.8 | 10 | 16 | 16 | 16 | | | 0.5 | 0.63 | 0.8 | T | T | T | T | T |

| Upstream | NSXm | | | | | | | NSX F/N/H/L | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trip unit | Micrologic (1) | | | | | | | Micrologic (2) | | | | | | | | | |
| Rating In (A) | 40 | 50 | 63 | 80 | 100 | 125 | 160 | 40 | 50 | 63 | 80 | 100 | 125 | 160 | 200 | 250 | > 250 |
| **Downstream SPD** | | | | | | | | | | | | | | | | | |
| | Selectivity limit (kA) | | | | | | | | | | | | | | | | |
| iPRD F20r | | | | | | T | T | | | | | | T | T | T | T | T |
| IPRD F40r | | | | | | T | T | | | | | | T | T | T | T | T |
| iQuick PF10 | 0.75 | 0.75 | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T |
| iQuick PRD8r | | 0.75 | T | T | T | T | T | | T | T | T | T | T | T | T | T | T |
| iQuick PRD20r | | 0.75 | T | T | T | T | T | | T | T | T | T | T | T | T | T | T |
| iQuick PRD40r | | | | T | T | T | T | | | | T | T | T | T | T | T | T |

(1): Micrologic 4.1
(2): Micrologic and Micrologic AB

0.8 Selectivity limit = 0.8 kA.

T Total selectivity.

No selectivity.

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11-2025
Document Number CA903014E