

Protective Devices

Combined RCD/MCB Devices

PKN6, 1+N-pole



Catalog



Powering Business Worldwide

SG14111



Description

- High-quality residual current device / miniature circuit breaker combination, line voltage-independent
- Contact position indicator red - green
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Wide variety of rated tripping currents
- Rated currents up to 40 A
- Tripping characteristics B, C
- Rated breaking capacity 6 kA

$I_n/I_{\Delta n}$
(A)Type
DesignationArticle No. Units per
package**Type A****6 kA, 1+N-pole****Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A**

SG14111

**Characteristic B**

6/0.03	PKN6-6/1N/B/003-A	236440	1/60
10/0.03	PKN6-10/1N/B/003-A	236500	1/60
13/0.03	PKN6-13/1N/B/003-A	236561	1/60
16/0.03	PKN6-16/1N/B/003-A	236633	1/60
20/0.03	PKN6-20/1N/B/003-A	236667	1/60
25/0.03	PKN6-25/1N/B/003-A	236697	1/60
32/0.03	PKN6-32/1N/B/003-A	236727	1/60
40/0.03	PKN6-40/1N/B/003-A	236756	1/60
6/0.3	PKN6-6/1N/B/03-A	236442	1/60
10/0.3	PKN6-10/1N/B/03-A	236502	1/60
13/0.3	PKN6-13/1N/B/03-A	236563	1/60
16/0.3	PKN6-16/1N/B/03-A	236635	1/60
20/0.3	PKN6-20/1N/B/03-A	236669	1/60
25/0.3	PKN6-25/1N/B/03-A	236699	1/60
32/0.3	PKN6-32/1N/B/03-A	236729	1/60
40/0.3	PKN6-40/1N/B/03-A	236758	1/60

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**Characteristic C**

6/0.03	PKN6-6/1N/C/003-A	236450	1/60
10/0.03	PKN6-10/1N/C/003-A	236510	1/60
13/0.03	PKN6-13/1N/C/003-A	236573	1/60
16/0.03	PKN6-16/1N/C/003-A	236645	1/60
20/0.03	PKN6-20/1N/C/003-A	236677	1/60
25/0.03	PKN6-25/1N/C/003-A	236707	1/60
32/0.03	PKN6-32/1N/C/003-A	236737	1/60
40/0.03	PKN6-40/1N/C/003-A	236766	1/60
6/0.3	PKN6-6/1N/C/03-A	236452	1/60
10/0.3	PKN6-10/1N/C/03-A	236512	1/60
13/0.3	PKN6-13/1N/C/03-A	236575	1/60
16/0.3	PKN6-16/1N/C/03-A	236647	1/60
20/0.3	PKN6-20/1N/C/03-A	236679	1/60
25/0.3	PKN6-25/1N/C/03-A	236709	1/60
32/0.3	PKN6-32/1N/C/03-A	236739	1/60
40/0.3	PKN6-40/1N/C/03-A	236768	1/60

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
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Type AC

6 kA, 1+N-pole
Conditionally surge current-proof 250 A, type AC

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Characteristic B			
6/0.03	PKN6-6/1N/B/003	236435	1/60
10/0.03	PKN6-10/1N/B/003	236495	1/60
13/0.03	PKN6-13/1N/B/003	236556	1/60
16/0.03	PKN6-16/1N/B/003	236628	1/60
20/0.03	PKN6-20/1N/B/003	236663	1/60
25/0.03	PKN6-25/1N/B/003	236693	1/60
32/0.03	PKN6-32/1N/B/003	236723	1/60
40/0.03	PKN6-40/1N/B/003	236752	1/60
6/0.3	PKN6-6/1N/B/03	236437	1/60
10/0.3	PKN6-10/1N/B/03	236497	1/60
13/0.3	PKN6-13/1N/B/03	236558	1/60
16/0.3	PKN6-16/1N/B/03	236630	1/60
20/0.3	PKN6-20/1N/B/03	236665	1/60
25/0.3	PKN6-25/1N/B/03	236695	1/60
32/0.3	PKN6-32/1N/B/03	236725	1/60
40/0.3	PKN6-40/1N/B/03	236754	1/60

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Characteristic C			
6/0.03	PKN6-6/1N/C/003	236445	1/60
10/0.03	PKN6-10/1N/C/003	236505	1/60
13/0.03	PKN6-13/1N/C/003	236568	1/60
16/0.03	PKN6-16/1N/C/003	236640	1/60
20/0.03	PKN6-20/1N/C/003	236673	1/60
25/0.03	PKN6-25/1N/C/003	236703	1/60
32/0.03	PKN6-32/1N/C/003	236733	1/60
40/0.03	PKN6-40/1N/C/003	236762	1/60
6/0.3	PKN6-6/1N/C/03	236447	1/60
10/0.3	PKN6-10/1N/C/03	236507	1/60
13/0.3	PKN6-13/1N/C/03	236570	1/60
16/0.3	PKN6-16/1N/C/03	236642	1/60
20/0.3	PKN6-20/1N/C/03	236675	1/60
25/0.3	PKN6-25/1N/C/03	236705	1/60
32/0.3	PKN6-32/1N/C/03	236735	1/60
40/0.3	PKN6-40/1N/C/03	236764	1/60

Specifications | Combined RCD/MCB Devices PKN6, 1+N-pole

Description

- Combined RCD/MCB Devices
- Line voltage-independent tripping
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Guide for secure terminal connection
- Switching toggle (MCB component) in colour designating the rated current
- Contact position indicator red - green
- Comprehensive range of accessories can be mounted subsequently
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test interval of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it's recommended to test in shorter intervals (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement (R_E), or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -A:** Protects against special forms of residual pulsating DC which have not been smoothed.
- **Type -G:** 10 ms time delay in order to avoid unwanted tripping (e.g. during thunderstorms).
Suitable for any circuit where personal injury or damage to property may occur in case of unwanted tripping.

Accessories:

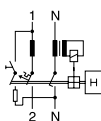
Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Shunt trip release	ZP-ASA/..	248438, 248439
Additional terminal 35 mm ²	BB-UL-TEPA/35	169823

Technical Data

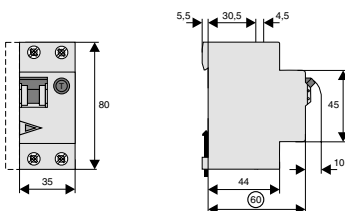
PKN6, 1+N-pole	
Electrical	
Design according to	IEC/EN 61009
Current test marks as printed onto the device	
Line voltage-independent tripping	instantaneous 250 A (8/20 μ s), surge current proof
Type G	10 ms delay 3 kA (8/20 μ s), surge current proof
Rated voltage	U_e 230 V AC; 50 Hz
Operational voltage range	196-253 V
Rated tripping current	$I_{\Delta n}$ 10, 30, 100, 300 mA
Rated non-tripping current	$I_{\Delta no}$ 0.5 $I_{\Delta n}$
Rated insulation voltage	U_i 440 VAC
Sensitivity	AC and pulsating DC
Selectivity class	3
Rated breaking capacity	I_{cn} 6 kA
Rated current	2 - 40 A
Rated impulse withstand voltage	U_{imp} 4 kV (1.2/50 μ s)
Characteristic	B, C
Maximum back-up fuse (short-circuit)	100 A gL (>6 kA)
Endurance	
electrical components	$\geq 4,000$ switching operations
mechanical components	$\geq 20,000$ switching operations
Mechanical	
Frame size	45 mm
Device height	80 mm
Device width	35 mm (2 MU)
Mounting	3-position DIN rail clip, permits removal from existing busbar system
Degree of protection, switch	IP20
Degree of protection, built-in	IP40
Upper and lower terminals	open-mouthed/lift terminals
Terminal protection	finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity	1 - 25 mm ²
Terminal torque	2 - 2.4 Nm
Busbar thickness	0.8 - 2 mm
Operating temperature	-25°C to +55°C
Storage- and transport temperature	-35°C to +60°C
Resistance to climatic conditions	according to IEC/EN 61009

Connection diagram

1+N-pole



Dimensions (mm)

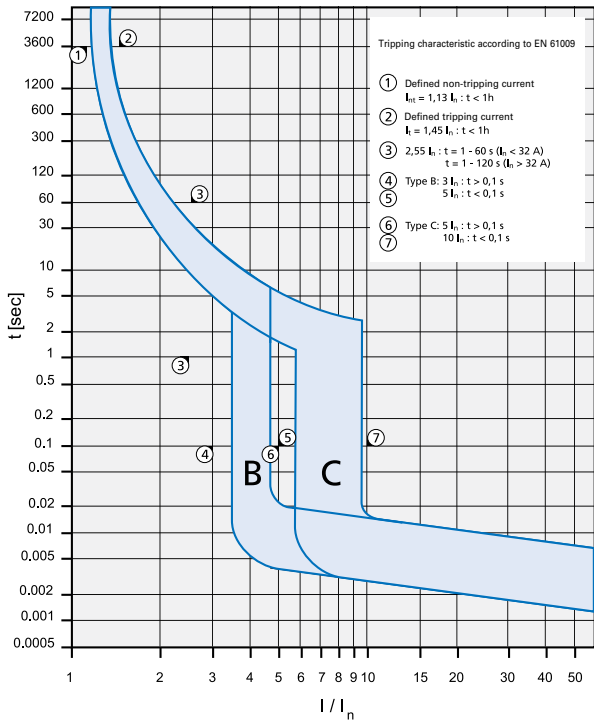


Load Capacity PKN6-../1N/

Effect of ambient temperature (MCB component)

I _n [A]	Ambient temperature T [°C]							
	-25	-15	-5	10	30	40	45	55
6	7	6.8	6.6	6.4	6	5.7	5.6	5.3
10	12.3	11.9	11.4	10.8	10	9.5	9.3	8.8
13	15.1	14.7	14.3	13.7	13	12.5	12.3	11.8
16	19.1	18.6	18	17.1	16	15.2	14.9	14.1
20	24.8	23.9	23	21.7	20	19	18.5	17.5
25	31.4	30.2	29.1	27.3	25	23.9	23.3	22.1
32	40.1	38.6	37.1	34.9	32	30.4	29.6	28
40	51	49	47	44	40	38.1	37.1	35.1

Tripping Characteristic PKN6-../1N/, Characteristics B and C



Short-circuit Selectivity PKN6-../1N/ towards DII-DIV fuse link

In case of short-circuit, there is selectivity between the combined RCD/MCB devices PKN6-../1N/ and the upstream fuses up to the specified values of the selectivity limit current I_s [kA] (i. e. in case of short-circuit currents I_{ks} under I_s , only the MCB will trip, in case of short-circuit currents above this value both protective devices will respond).

*) basically in accordance with EN 60898-1 D.5.2.b

Short-circuit selectivity **Characteristic B** towards fuse link **DII-DIV***

PKN6 I _n [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
2	<0.5 ¹⁾	<0.5 ¹⁾	2.2	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
4	<0.5 ¹⁾	<0.5 ¹⁾	0.7	1.2	3.7	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
6		<0.5 ¹⁾	0.7	1.0	2.9	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
8		<0.5 ¹⁾	0.6	1.0	2.4	5.1	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
10			0.6	0.9	1.9	3.3	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
13			0.5	0.7	1.6	2.8	5.7	6.0 ²⁾	6.0 ²⁾
16				0.7	1.4	2.4	4.4	6.0 ²⁾	6.0 ²⁾
20					1.3	2.2	4.0	6.0 ²⁾	6.0 ²⁾
25					1.3	2.1	3.8	5.8	6.0 ²⁾
32						2.0	3.5	5.2	6.0 ²⁾
40							3.1	4.5	6.0 ²⁾

Short-circuit selectivity **Characteristic C** towards fuse link **DII-DIV***

PKN6 I _n [A]	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
2	<0.5 ¹⁾	<0.5 ¹⁾	1.7	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
4	<0.5 ¹⁾	<0.5 ¹⁾	0.7	1.3	4.2	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
5	<0.5 ¹⁾	<0.5 ¹⁾	0.6	1.1	3.6	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
6		<0.5 ¹⁾	0.6	1.0	2.9	5.8	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
8		<0.5 ¹⁾	<0.5	0.9	2.5	4.8	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
10			<0.5	0.7	1.5	2.6	5.3	6.0 ²⁾	6.0 ²⁾
13					1.4	2.3	4.6	6.0 ²⁾	6.0 ²⁾
16					1.2	1.8	3.4	5.5	6.0 ²⁾
20					1.2	1.7	3.1	5.0	6.0 ²⁾
25						1.6	2.9	4.6	6.0 ²⁾
32							2.3	3.4	6.0 ²⁾
40								2.9	6.0 ²⁾

¹⁾ Selectivity limit current I_s under 0.5 kA.

²⁾ Selectivity limit current I_s = rated breaking capacity I_{cn} of the RCD/MCB device

Darker areas: no selectivity



Short-circuit Selectivity PKN6-./1N/ towards D01-D03 fuse link

In case of short-circuit, there is selectivity between the combined RCD/MCB devices PKN6-./1N/ and the upstream fuses up to the specified values of the selectivity limit current I_s [kA] (i. e. in case of short-circuit currents I_{ks} under I_s , only the MCB will trip, in case of short-circuit currents above this value both protective devices will respond).

*) basically in accordance with EN 60898-1 D.5.2.b

Short-circuit selectivity **Characteristic B** towards fuse link **D01-D03***)

PKN6	D01-D03 gL/gG								
I _n [A]	10	16	20	25	35	50	63	80	100
2	<0.5 ¹⁾	0.7	1.6	3.3	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
4	<0.5 ¹⁾	<0.5 ¹⁾	0.6	0.9	2.9	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
6		<0.5 ¹⁾	0.5	0.8	2.4	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
8			0.6	0.8	2.0	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
10			0.5	0.8	1.6	3.7	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
13			0.6	0.7	1.4	3.0	4.7	6.0 ²⁾	6.0 ²⁾
16				0.6	1.2	2.6	3.9	6.0 ²⁾	6.0 ²⁾
20					1.2	2.5	3.6	6.0 ²⁾	6.0 ²⁾
25					1.2	2.3	3.3	5.7	6.0 ²⁾
32						2.3	3.1	5.1	6.0 ²⁾
40							2.8	4.5	6.0 ²⁾

Short-circuit selectivity **Characteristic C** towards fuse link **D01-D03***)

PKN6	D01-D03 gL/gG								
I _n [A]	10	16	20	25	35	50	63	80	100
2	<0.5 ¹⁾	0.5	0.5	2.4	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
4	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	0.9	3.4	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
5	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	0.9	2.9	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
6		<0.5 ¹⁾	<0.5 ¹⁾	0.8	2.3	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
8			<0.5	0.7	2.1	5.5	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
10			<0.5	0.6	1.3	2.9	4.5	6.0 ²⁾	6.0 ²⁾
13					1.2	2.5	3.9	6.0 ²⁾	6.0 ²⁾
16					1.0	2.1	3.0	5.5	6.0 ²⁾
20					1.0	2.0	2.7	5.0	6.0 ²⁾
25						1.9	2.6	4.5	6.0 ²⁾
32							2.1	3.4	6.0 ²⁾
40								3.0	6.0 ²⁾

Short-circuit Selectivity PKN6-./1N/ towards NH-00 fuse link

In case of short-circuit, there is selectivity between the combined RCD/MCB devices PKN6-./1N/ and the upstream fuses up to the specified values of the selectivity limit current I_s [kA] (i. e. in case of short-circuit currents I_{ks} under I_s , only the MCB will trip, in case of short-circuit currents above this value both protective devices will respond).

*) basically in accordance with EN 60898-1 D.5.2.b

Short-circuit selectivity **Characteristic B** towards fuse link **NH-00***)

PKN6	NH-00 gL/gG											
I _n [A]	16	20	25	32	35	40	50	63	80	100	125	160
2	<0.5 ¹⁾	1.1	3.6	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
4	<0.5 ¹⁾	0.5	0.9	1.6	2.8	4.4	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
6	<0.5 ¹⁾	0.5	0.8	1.4	2.2	3.3	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
8	<0.5 ¹⁾	<0.5 ¹⁾	0.7	1.0	1.9	2.8	5.3	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
10		<0.5 ¹⁾	0.7	0.9	1.5	2.1	3.4	4.3	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
13		<0.5 ¹⁾	0.6	0.8	1.4	1.8	2.8	3.6	5.7	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
16			0.6	0.7	1.2	1.5	2.4	3.0	4.5	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
20				0.7	1.1	1.5	2.2	2.8	4.2	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
25				0.7	1.1	1.4	2.1	2.6	4.0	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
32					1.0	1.4	2.0	2.5	3.7	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾
40								2.3	3.4	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾

Short-circuit selectivity **Characteristic C** towards fuse link **NH-00***)

PKN6	NH-00 g/LgG												
I _n [A]	16	20	25	32	35	40	50	63	80	100	125	160	
2	<0.5 ¹⁾	0.6	2.6	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	
4	<0.5 ¹⁾	<0.5 ¹⁾	0.9	1.8	3.2	4.8	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	
5	<0.5 ¹⁾	<0.5 ¹⁾	0.8	1.6	2.7	4.1	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	
6	<0.5 ¹⁾	<0.5 ¹⁾	0.7	1.3	2.2	3.3	5.9	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	
8	<0.5 ¹⁾	<0.5 ¹⁾	0.6	1.1	1.9	2.8	5.0	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	
10			0.5	0.8	1.2	1.7	2.7	3.4	5.5	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	
13					1.1	1.5	2.3	2.9	4.7	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	
16					1.0	1.3	1.8	2.3	3.7	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	
20					0.9	1.1	1.7	2.2	3.4	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	
25							1.6	2.1	3.2	6.0 ²⁾	6.0 ²⁾	6.0 ²⁾	
32								1.7	2.6	5.3	6.0 ²⁾	6.0 ²⁾	
40									2.4	4.5	6.0 ²⁾	6.0 ²⁾	

¹⁾ Selectivity limit current I_s under 0.5 kA.

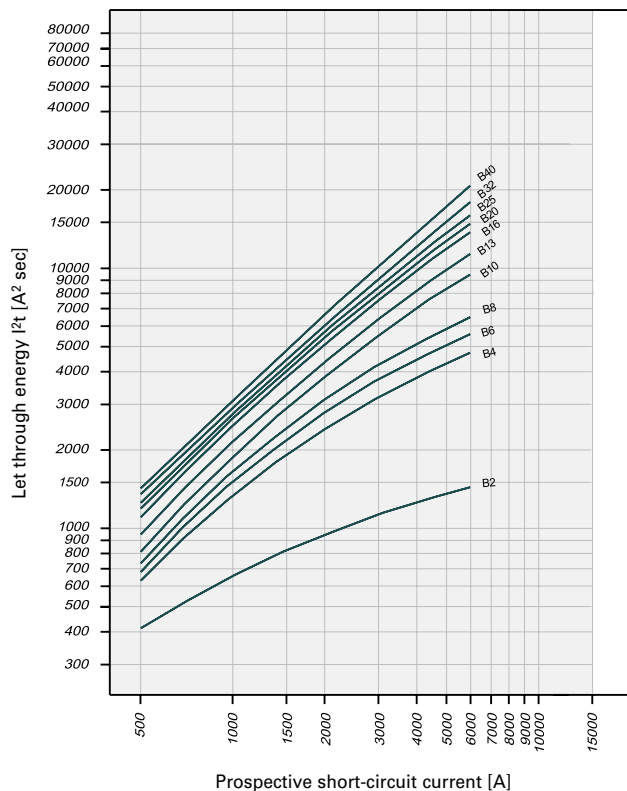
²⁾ Selectivity limit current I_s = rated breaking capacity I_{cn} of the RCD/MCB device

Darker areas: no selectivity

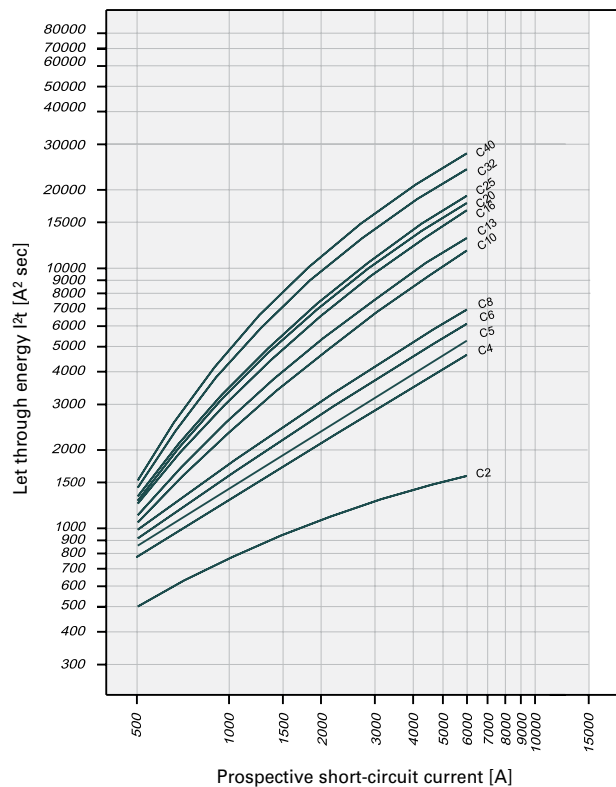


Let-through Energy PKN6-../1N/

Let-through Energy PKN6, Characteristic B, 1+N-pole



Let-through Energy PKN6, Characteristic C, 1+N-pole



Eaton's electrical business is a global leader with deep regional application expertise in power distribution and circuit protection; power quality, backup power and energy storage; control and automation; life safety and security; structural solutions; and harsh and hazardous environment solutions. Through end-to-end services, channel and an integrated digital platform & insights Eaton is powering what matters across industries and around the world, helping customers solve their most critical electrical power management challenges.

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