

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

### Description

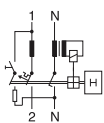
- Combined RCD/MCB Devices
- Line voltage-independent tripping
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Guide for secure terminal connection
- Switching 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 months. 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 months 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).  
Compulsory in Austria for any circuit where personal injury or damage to property may occur in case of unwanted tripping (§12.1.6 ÖVE/ÖNORM E 8001-1).

### 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
Terminal cover cap	KLV-TC-2	276240
Additional terminal 35 mm <sup>2</sup>	Z-HA-EK/35	263960

### Connection diagram

1+N-pole



### Technical Data

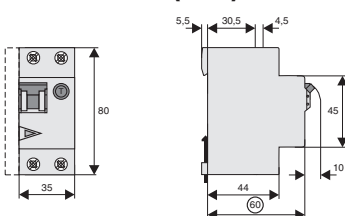
#### Electrical

Design according to	IEC/EN 61009
Current test marks as printed onto the device	
Tripping	
line-voltage-independent	instantaneous 250A (8/20 $\mu$ s)
Type G	surge current proof; 10 ms delay 3kA (8/20 $\mu$ s) surge current proof
Rated voltage $U_e$	230 V; 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	10 kA
Rated current	2 - 40 A
Rated impulse withstand voltage $U_{imp}$	4 kV (1.2/50 $\mu$ s)
Characteristic	B, C
Maximum back-up fuse (short circuit)	100 A gL (>10 kA)
Endurance	electrical comp. $\geq$ 4,000 switching op. mechanical comp. $\geq$ 20,000 switching op.

#### Mechanical

Frame size	45 mm
Device height	80 mm
Device width	35 mm (2MU)
Mounting	3-position DIN rail clip, permits removal from existing busbar system
Upper and lower terminals	open mouthed/lift terminals
Terminal protection	finger and hand touch safe, DGVV VS3, EN 50274
Terminal capacity	1 - 25 mm <sup>2</sup>
Busbar thickness	0.8-2 mm
Degree of protection switch	IP20
Degree of protection, built-in	IP40
Tripping temperature	-25°C to +40°C
Storage- and transport temperature	-35°C to +60°C
Resistance to climatic conditions	acc. to IEC/EN 61009

### Dimensions (mm)

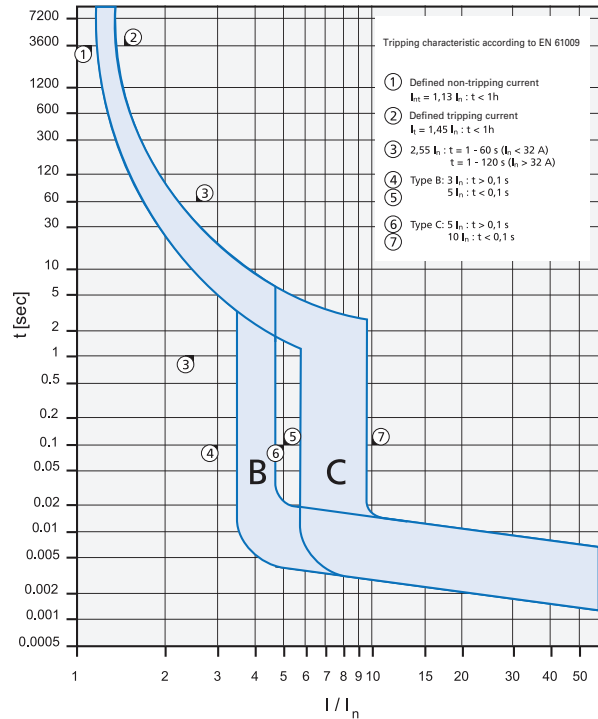


**Load Capacity PKNM-../1N/**

Effect of ambient temperature (MCB component)

I <sub>n</sub> [A]	Ambient temperature T [°C]								
	-25	-20	-10	0	10	20	30	35	40
2	2.5	2.4	2.3	2.2	2.2	2.1	2.0	2.0	1.9
4	4.9	4.8	4.7	4.5	4.3	4.2	4.0	3.9	3.9
5	6.2	6.0	5.8	5.6	5.4	5.2	5.0	4.9	4.8
6	7.4	7.2	7.0	6.7	6.5	6.3	6.0	5.9	5.8
8	9.9	9.6	9.3	9.0	8.7	8.4	8.0	7.9	7.7
10	12	12	12	11	11	10	10	9.9	9.7
12	15	14	14	13	13	13	12	12	12
13	16	16	15	15	14	14	13	13	13
15	19	18	17	17	16	16	15	15	15
16	20	19	19	18	17	17	16	16	15
20	25	24	23	22	22	21	20	20	19
25	31	30	29	28	27	26	25	25	24
32	40	38	37	36	35	33	32	32	31
40	49	48	47	45	43	42	40	39	39

**Tripping Characteristic PKNM-../1N/, Characteristics B a. C**



**Short Circuit Selectivity PKNM-../1N/ towards DII-DIV fuse link**

In case of short circuit, there is selectivity between the combined RCD/MCB devices PKNM-../1N/ and the upstream fuses up to the specified values of the selectivity limit current I<sub>s</sub> [kA] (i. e. in case of short-circuit currents I<sub>ks</sub> under I<sub>s</sub>, 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\***

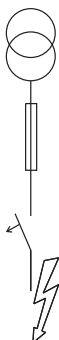
PKNM	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
I <sub>n</sub> [A]	10	16	20	25	35	50	63	80	100
2	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	2.2	8.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.2	3.7	10.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.7	1.0	2.9	6.9	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	0.6	1.0	2.4	5.1	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
10			0.6	0.9	1.9	3.3	7.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
13			0.5	0.7	1.6	2.8	5.7	9.0	10.0 <sup>2)</sup>
16				0.7	1.4	2.4	4.4	7.0	10.0 <sup>2)</sup>
20					1.3	2.2	4.0	6.3	10.0 <sup>2)</sup>
25					1.3	2.1	3.8	5.8	10.0 <sup>2)</sup>
32						2.0	3.5	5.2	9.5
40							3.1	4.5	8.1

Short circuit selectivity **characteristic C** towards fuse link **DII-DIV\***

PKNM	DII-DIV gL/gG								
	10	16	20	25	35	50	63	80	100
I <sub>n</sub> [A]	10	16	20	25	35	50	63	80	100
2	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	1.7	6.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
4	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.3	4.2	8.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
5	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.1	3.6	7.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.6	1.0	2.9	5.8	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	<0.5	0.9	2.5	4.8	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
10			<0.5	0.7	1.5	2.6	5.3	9.0	10.0 <sup>2)</sup>
13					1.4	2.3	4.6	7.6	10.0 <sup>2)</sup>
16					1.2	1.8	3.4	5.5	10.0 <sup>2)</sup>
20					1.2	1.7	3.1	5.0	10.0 <sup>2)</sup>
25						1.6	2.9	4.6	10.0 <sup>2)</sup>
32							2.3	3.4	7.7
40								2.9	6.2

<sup>1)</sup> Selectivity limit current I<sub>s</sub> under 0.5 kA

<sup>2)</sup> Selectivity limit current I<sub>s</sub> = rated breaking capacity I<sub>cn</sub> of the RCD/MCB device  
Darker areas: no selectivity



**Short Circuit Selectivity PKNM-./1N/ towards D01-D03 fuse link**

In case of short circuit, there is selectivity between the combined RCD/MCB devices PKNM-./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\***

PKNM	D01-D03 gL/gG									
	$I_n$ [A]	10	16	20	25	35	50	63	80	100
2		<0.5 <sup>1)</sup>	0.7	1.6	3.3	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
4		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	0.9	2.9	10.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
6			<0.5 <sup>1)</sup>	0.5	0.8	2.4	8.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
8				0.6	0.8	2.0	6.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
10				0.5	0.8	1.6	3.7	6.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
13				0.6	0.7	1.4	3.0	4.7	9.0	10.0 <sup>2)</sup>
16				0.6	1.2	2.6	3.9	7.0	10.0 <sup>2)</sup>	
20					1.2	2.5	3.6	6.2	10.0 <sup>2)</sup>	
25					1.2	2.3	3.3	5.7	10.0 <sup>2)</sup>	
32						2.3	3.1	5.1	10.0 <sup>2)</sup>	
40							2.8	4.5	9.5	

Short circuit selectivity **characteristic C** towards fuse link **D01-D03\***

PKNM	D01-D03 gL/gG									
	$I_n$ [A]	10	16	20	25	35	50	63	80	100
2		<0.5 <sup>1)</sup>	0.5	0.5	2.4	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
4		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.9	3.4	9.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.9	2.9	8.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
6			<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	2.3	6.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
8				<0.5	0.7	2.1	5.5	9.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
10				<0.5	0.6	1.3	2.9	4.5	8.9	10.0 <sup>2)</sup>
13						1.2	2.5	3.9	7.6	10.0 <sup>2)</sup>
16						1.0	2.1	3.0	5.5	10.0 <sup>2)</sup>
20						1.0	2.0	2.7	5.0	10.0 <sup>2)</sup>
25							1.9	2.6	4.5	10.0 <sup>2)</sup>
32								2.1	3.4	10.0 <sup>2)</sup>
40									3.0	8.7

**Short Circuit Selectivity PKNM-./1N/ towards NH-00 fuse link**

In case of short circuit, there is selectivity between the combined RCD/MCB devices PKNM-./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\***

PKNM	NH-00 gL/gG												
	$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160
2		<0.5 <sup>1)</sup>	1.1	3.6	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
4		<0.5 <sup>1)</sup>	0.5	0.9	1.6	2.8	4.4	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	0.5	0.8	1.4	2.2	3.3	7.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.0	1.9	2.8	5.3	7.8	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
10			<0.5 <sup>1)</sup>	0.7	0.9	1.5	2.1	3.4	4.3	7.3	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
13			<0.5 <sup>1)</sup>	0.6	0.8	1.4	1.8	2.8	3.6	5.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
16				0.6	0.7	1.2	1.5	2.4	3.0	4.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
20					0.7	1.1	1.5	2.2	2.8	4.2	9.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
25					0.7	1.1	1.4	2.1	2.6	4.0	8.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
32						1.0	1.4	2.0	2.5	3.7	7.1	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
40								2.3	3.4	6.2	8.8	10.0 <sup>2)</sup>	

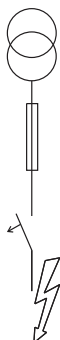
Short circuit selectivity **characteristic C** towards fuse link **NH-00\***

PKNM	NH-00 gL/gG												
	$I_n$ [A]	16	20	25	32	35	40	50	63	80	100	125	160
2		<0.5 <sup>1)</sup>	0.6	2.6	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
4		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.9	1.8	3.2	4.8	8.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
5		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.8	1.6	2.7	4.1	7.2	9.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
6		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.7	1.3	2.2	3.3	5.9	8.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
8		<0.5 <sup>1)</sup>	<0.5 <sup>1)</sup>	0.6	1.1	1.9	2.8	5.0	6.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
10				0.5	0.8	1.2	1.7	2.7	3.4	5.5	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
13						1.1	1.5	2.3	2.9	4.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
16						1.0	1.3	1.8	2.3	3.7	8.7	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
20						0.9	1.1	1.7	2.2	3.4	8.0	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>
25							1.6	2.1	3.2	7.2	10.0 <sup>2)</sup>	10.0 <sup>2)</sup>	
32								1.7	2.6	5.3	9.0	10.0 <sup>2)</sup>	
40									2.4	4.5	7.5	10.0	

<sup>1)</sup> Selectivity limit current  $I_s$  under 0.5 kA

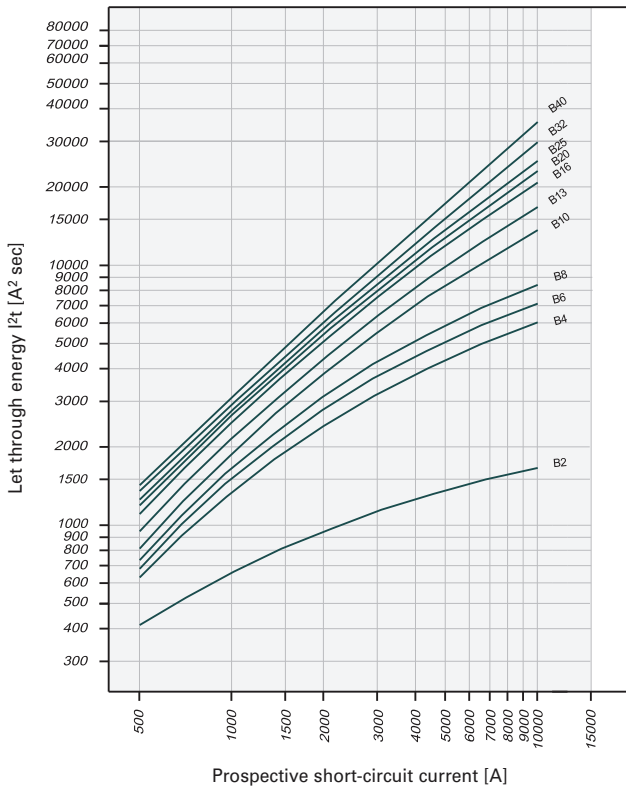
<sup>2)</sup> Selectivity limit current  $I_s$  = rated breaking capacity  $I_{cn}$  of the RCD/MCB device

Darker areas: no selectivity



**Let-through Energy PKNM-../1N/**

Let-through energy PKNM, characteristic B, 1+N-pole



Let-through energy PKNM, characteristic C, 1+N-pole

