

**SUMMARY OF MODELS OF HRC FUSE-LINKS**



Type		PNA000	PHNA000	PNA00	PHNA00
Rated current $I_n$		up to 160 A	up to 50 A	up to 160 A	up to 100 A
Rated voltage $U_n$	AC	400 V, 500 V	690 V	500 V	690 V
	DC	250 V	250 V	250 V	250 V
Fuse-link size		000	000	00	00
Utilization category of the fuse-link		gG, aM	gG	gG, aM	gG

**Use**

Fuse switch-disconnectors		FH000.., FH00..	FH00..
Fuse switch-disconnectors of vertical design			FSD00..
Fuse-rails			FSR00..
Fuse-bases			SPB00, S3PB00, SPF00

**Accessories**

Signal contact			VL50
Signalling of fuse-link state			MD-M3
Disconnecting link			ZP000
Replacement handles			D1PH, DP, DPM

**SUMMARY OF MODELS OF HRC FUSE-LINKS**

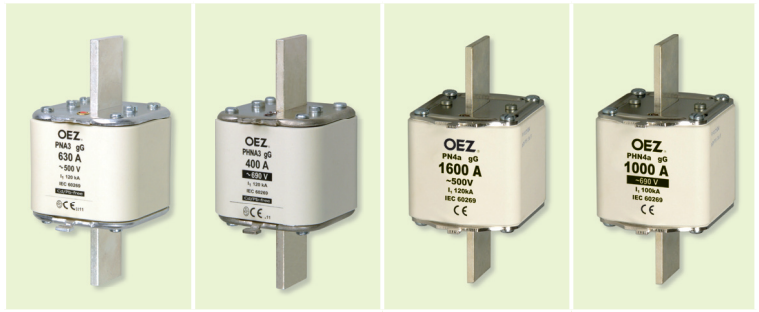


Type		PNA1	PHNA1	PNA2	PHNA2
Rated current $I_n$		up to 250 A	up to 200 A	up to 400 A	up to 315 A
Rated voltage $U_n$	AC	500 V, 690 V	690 V	500 V, 690 V	690 V
	DC	250 V, 440 V	440 V	250 V, 440 V	440 V
Fuse-link size		1	1	2	2
Utilization category of the fuse-link		gG, aM	gG	gG, aM	gG

Use		
Fuse switch-disconnectors		FH1.. FH2..
Fuse switch-disconnectors of vertical design		FSD1.. FSD2..
Fuse-rails		FSR1.. FSR2..
Fuse-bases		SPB1, S3PB1, SPF1 SPB2, S3PB2, SPF2

Accessories		
Signal contact		VL50
Signalling of fuse-link state		MD-M3
Disconnecting links		ZP1 ZP2
Replacement handles		D1PH, DP, DPM

**SUMMARY OF MODELS OF HRC FUSE-LINKS**



Type		PNA3 / PN3	PHNA3	PN4a	PHN4a
Rated current $I_n$		up to 630 A	up to 500 A	up to 1 600 A	up to 1 000 A
Rated voltage $U_n$	AC	500 V, 690 V	690 V	500 V	690 V
	DC	250 V, 440 V	440 V	250 V	250 V
Fuse-link size		3	3	4a	4a
Utilization category of the fuse-link		gG, aM	gG	gG	gG

**Use**

Fuse switch-disconnectors		FH3..	LTL4a
Fuse switch-disconnectors of vertical design		FSD3..	-
Fuse-rails		FSR3..	-
Fuse-bases		SPF3	-

**Accessories**

Signal contact		VL50	
Signalling of fuse-link state		MD-M3	
Disconnecting links		ZP3..	TM4a..
Replacement handles		D1PH, DP, DPM	-

## FUSE-LINKS WITH BLADE CONTACTS PNA

- High limiting and breaking capacity.
- Low power losses.
- The fuse-links do not contain harmful substances according to the RoHS Regulation (cadmium, lead and other).
- For use in fuse switch-disconnectors, fuse-rails and fuse-bases
- Utilization category gG (black print) for protection of lines, cables and other equipment against overload and short-circuit.
- Utilization category aM (green print) for protection of motors, overcurrent relays, contactors and similar devices only against short-circuit.



### Fuse-links with blade contacts PNA000

I <sub>n</sub> [A]	Utilization category gG					Utilization category aM				
	Type	Order code	Power losses [W]	Weight [kg]	Package [pcs]	Type	Order code	Power losses [W]	Weight [kg]	Package [pcs]
6	PNA000 6A gG	OEZ:40477	1.30	0.13	3	PNA000 6A aM	OEZ:40491	0.8	0.13	3
10	PNA000 10A gG	OEZ:40478	1.00	0.13	3	PNA000 10A aM	OEZ:40492	0.5	0.13	3
16	PNA000 16A gG	OEZ:40479	1.70	0.13	3	PNA000 16A aM	OEZ:40494	0.8	0.13	3
20	PNA000 20A gG	OEZ:40480	2.53	0.13	3	PNA000 20A aM	OEZ:40495	1.0	0.13	3
25	PNA000 25A gG	OEZ:40481	2.30	0.13	3	PNA000 25A aM	OEZ:40496	1.2	0.13	3
32	PNA000 32A gG	OEZ:40482	2.60	0.13	3	PNA000 32A aM	OEZ:40497	1.5	0.13	3
35	PNA000 35A gG	OEZ:40483	3.39	0.13	3	-	-	-	-	3
40	PNA000 40A gG	OEZ:40484	3.10	0.13	3	PNA000 40A aM	OEZ:40498	2.0	0.13	3
50	PNA000 50A gG	OEZ:40485	3.80	0.13	3	PNA000 50A aM	OEZ:40499	2.4	0.13	3
63	PNA000 63A gG	OEZ:40486	4.60	0.13	3	PNA000 63A aM	OEZ:40500	3.3	0.13	3
80	PNA000 80A gG	OEZ:40487	5.80	0.13	3	PNA000 80A aM	OEZ:40501	4.5	0.13	3
100	PNA000 100A gG	OEZ:40488	6.95	0.13	3	PNA000 100A aM	OEZ:40502	5.3	0.13	3
125	PNA000 125A gG	OEZ:40489	7.20	0.16	3	-	-	-	-	3
160	PNA000 160A gG <sup>1)</sup>	OEZ:40490	9.00	0.16	3	-	-	-	-	3

<sup>1)</sup> U<sub>n</sub> = AC 400 V

### Fuse-links with blade contacts PNA00

I <sub>n</sub> [A]	Utilization category gG					Utilization category aM				
	Type	Order code	Power losses [W]	Weight [kg]	Package [pcs]	Type	Order code	Power losses [W]	Weight [kg]	Package [pcs]
100	-	-	-	-	3	PNA00 100A aM	OEZ:40515	4.9	0.20	3
125	PNA00 125A gG	OEZ:40513	8.9	0.21	3	PNA00 125A aM	OEZ:40516	6.3	0.20	3
160	PNA00 160A gG	OEZ:40514	10.5	0.21	3	PNA00 160A aM	OEZ:40517	9.3	0.20	3

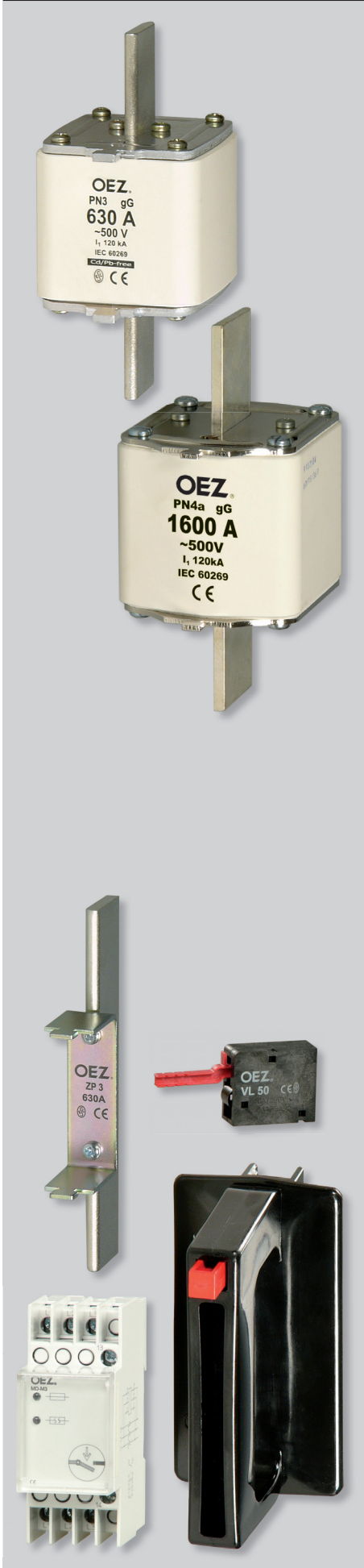
### Fuse-links with blade contacts PNA1

I <sub>n</sub> [A]	Utilization category gG					Utilization category aM				
	Type	Order code	Power losses [W]	Weight [kg]	Package [pcs]	Type	Order code	Power losses [W]	Weight [kg]	Package [pcs]
16	PNA1 16A gG	OEZ:40428	2.10	0.30	3	-	-	-	-	3
20	PNA1 20A gG	OEZ:40429	2.72	0.30	3	-	-	-	-	3
25	PNA1 25A gG	OEZ:40430	2.80	0.30	3	-	-	-	-	3
32	PNA1 32A gG	OEZ:40431	3.40	0.30	3	-	-	-	-	3
35	PNA1 35A gG	OEZ:40432	3.20	0.30	3	-	-	-	-	3
40	PNA1 40A gG	OEZ:40433	4.65	0.30	3	-	-	-	-	3
50	PNA1 50A gG	OEZ:40434	4.62	0.30	3	-	-	-	-	3
63	PNA1 63A gG	OEZ:40435	6.00	0.30	3	PNA1 63A aM	OEZ:40443	4.0	0.30	3
80	PNA1 80A gG	OEZ:40436	7.50	0.30	3	PNA1 80A aM	OEZ:40444	4.9	0.30	3
100	PNA1 100A gG	OEZ:40437	8.45	0.30	3	PNA1 100A aM	OEZ:40445	5.8	0.44	3
125	PNA1 125A gG	OEZ:40438	10.70	0.30	3	PNA1 125A aM	OEZ:40446	8.1	0.44	3
160	PNA1 160A gG	OEZ:40439	14.60	0.30	3	PNA1 160A aM	OEZ:40447	11.4	0.44	3
200	PNA1 200A gG	OEZ:40440	15.00	0.44	3	PNA1 200A aM	OEZ:40448	14.1	0.44	3
224	PNA1 224A gG	OEZ:40441	16.10	0.44	3	-	-	-	-	3
250	PNA1 250A gG	OEZ:40442	18.20	0.44	3	PNA1 250A aM	OEZ:40449	18.0	0.44	3

### Fuse-links with blade contacts PNA2

I <sub>n</sub> [A]	Utilization category gG					Utilization category aM				
	Type	Order code	Power losses [W]	Weight [kg]	Package [pcs]	Type	Order code	Power losses [W]	Weight [kg]	Package [pcs]
35	PNA2 35A gG	OEZ:40386	3.20	0.46	3	-	-	-	-	3
40	PNA2 40A gG	OEZ:40387	4.30	0.46	3	-	-	-	-	3
50	PNA2 50A gG	OEZ:40388	4.59	0.46	3	-	-	-	-	3
63	PNA2 63A gG	OEZ:40389	5.90	0.46	3	-	-	-	-	3
80	PNA2 80A gG	OEZ:40390	6.80	0.46	3	-	-	-	-	3
100	PNA2 100A gG	OEZ:40391	7.81	0.46	3	-	-	-	-	3
125	PNA2 125A gG	OEZ:40392	9.80	0.46	3	PNA2 125A aM	OEZ:40400	8.1	0.46	3
160	PNA2 160A gG	OEZ:40393	13.00	0.46	3	PNA2 160A aM	OEZ:40401	11.4	0.46	3
200	PNA2 200A gG	OEZ:40394	14.90	0.46	3	PNA2 200A aM	OEZ:40402	14.1	0.46	3
224	PNA2 224A gG	OEZ:40395	15.40	0.46	3	-	-	-	-	3
250	PNA2 250A gG	OEZ:40396	17.00	0.46	3	PNA2 250A aM	OEZ:40403	18.0	0.46	3
315	PNA2 315A gG	OEZ:40397	21.40	0.66	3	PNA2 315A aM	OEZ:40404	22.6	0.68	3
350	PNA2 350A gG	OEZ:40398	26.00	0.66	3	-	-	-	-	3
400	PNA2 400A gG	OEZ:40399	29.00	0.66	3	PNA2 400A aM	OEZ:40405	30.8	0.68	3

**FUSE-LINKS WITH BLADE CONTACTS PNA**



**Fuse-links with blade contacts PNA3**

I <sub>n</sub> [A]	Type	Utilization category gG			Utilization category aM				
		Order code	Power losses [W]	Weight [kg]	Type	Order code	Power losses [W]	Weight [kg]	Package [pcs]
200	<b>PNA3 200A gG</b>	OEZ:40356	14.90	0.66	-	-	-	-	3
224	<b>PNA3 224A gG</b>	OEZ:40357	15.40	0.66	-	-	-	-	3
250	<b>PNA3 250A gG</b>	OEZ:40358	17.90	0.66	-	-	-	-	3
315	<b>PNA3 315A gG</b>	OEZ:40359	21.40	0.66	<b>PNA3 315A aM</b>	OEZ:40364	22.6	0.66	3
350	<b>PNA3 350A gG</b>	OEZ:40360	26.00	0.66	-	-	-	-	3
400	<b>PNA3 400A gG</b>	OEZ:40361	27.50	0.66	<b>PNA3 400A aM</b>	OEZ:40365	30.8	0.66	3
500	<b>PN3 500A gG</b>	OEZ:07137	31.85	1.08	<b>PNA3 500A aM</b>	OEZ:40366	47.0	1.00	3
630	<b>PN3 630A gG</b>	OEZ:07140	40.32	1.08	<b>PNA3 630A aM</b>	OEZ:40367	50.0	1.00	3

**Fuse-links with blade contacts PN4a<sup>1)</sup>**

I <sub>n</sub> [A]	Type	Utilization category gG			Utilization category aM				
		Order code	Power losses [W]	Weight [kg]	Type	Order code	Power losses [W]	Weight [kg]	Package [pcs]
630	<b>PN4a 630A gG</b>	OEZ:34386	43	2.0	-	-	-	-	1
800	<b>PN4a 800A gG</b>	OEZ:34387	59	2.0	-	-	-	-	1
1000	<b>PN4a 1000A gG</b>	OEZ:34388	84	2.0	-	-	-	-	1
1250	<b>PN4a 1250A gG</b>	OEZ:34389	104	2.0	-	-	-	-	1
1600	<b>PN4a 1600A gG</b>	OEZ:34390	148	2.0	-	-	-	-	1

<sup>1)</sup> Fuses PN4a are not manufactured in Cd/Pb free version.

**Accessories**

Disconnecting links	<b>ZP.., TM4a..</b>	page E28
Signal contact	<b>VL50</b>	page E29
Electronic signalling of fuse state	<b>MD-M3</b>	page E30
Replacement handles	<b>D..</b>	page E32

## FUSE-LINKS WITH BLADE CONTACTS PNA

### Specifications

#### Utilization category gG

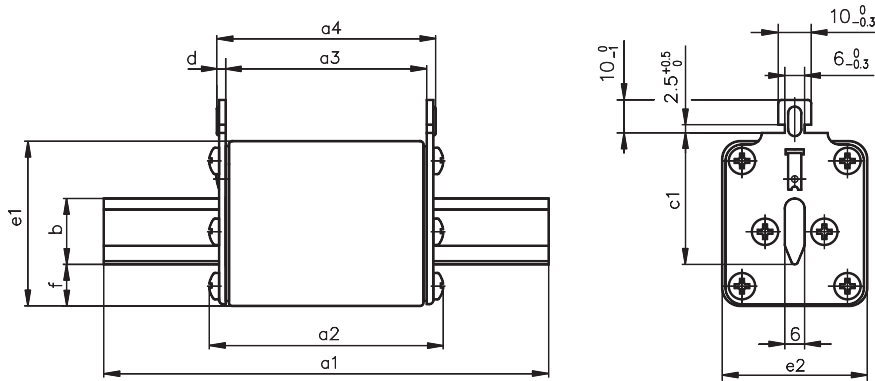
Type		PNA000	PNA00	PNA1	PNA2	PNA3 / PN3	PN4a
Standards		IEC 60269	IEC 60269	IEC 60269	IEC 60269	IEC 60269	IEC 60269
		DIN 43620	DIN 43620	DIN 43620	DIN 43620	DIN 43620	DIN 43620
		EN 60269	EN 60269	EN 60269	EN 60269	EN 60269	EN 60269
Approval marks							
Rated operating voltage	U <sub>n</sub>	AC 400 V, 500 V	AC 500 V	AC 500 V	AC 500 V	AC 500 V	AC 500 V
		DC 250 V	DC 250 V	DC 440 V	DC 440 V	DC 440 V / 250 V	DC 250 V
Rated operating current	I <sub>n</sub>	6 ÷ 160 A	125 ÷ 160 A	16 ÷ 250 A	35 ÷ 400 A	200 ÷ 630 A	630 ÷ 1 600 A
Breaking capacity (RMS)	AC	120 kA	120 kA	120 kA	120 kA	120 kA	120 kA
	DC	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA
Utilization category		gG	gG	gG	gG	gG	gG
Fuse-link size		000 (00C)	00	1	2	3	4a
Selectivity		1: 1.6	1: 1.6	1: 1.6	1: 1.6	1: 1.6	1: 1.6

#### Utilization category aM

Type		PNA000	PNA00	PNA1	PNA2	PNA3
Standards		IEC 60269	IEC 60269	IEC 60269	IEC 60269	IEC 60269
		DIN 43620	DIN 43620	DIN 43620	DIN 43620	DIN 43620
		EN 60269	EN 60269	EN 60269	EN 60269	EN 60269
Approval marks						
Rated operating voltage	U <sub>n</sub>	AC 500 V	AC 500 V	AC 690 V	AC 690 V	AC 690 V
		DC 250 V	DC 250 V	DC 250 V	DC 250 V	DC 250 V
Rated operating current	I <sub>n</sub>	6 ÷ 100 A	100 ÷ 160 A	63 ÷ 250 A	125 ÷ 400 A	315 ÷ 630 A
Breaking capacity (RMS)	AC	120 kA	120 kA	120 kA	120 kA	120 kA
	DC	50 kA	50 kA	50 kA	50 kA	50 kA
Utilization category		aM	aM	aM	aM	aM
Fuse-link size		000 (00C)	00	1	2	3
Selectivity		1: 1.6	1: 1.6	1: 1.6	1: 1.6	1: 1.6

# FUSE-LINKS WITH BLADE CONTACTS PNA

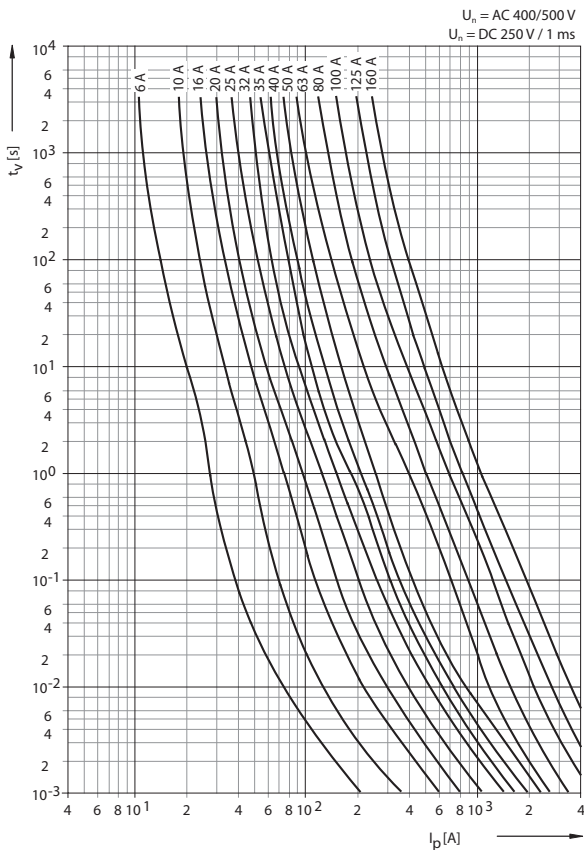
## Dimensions



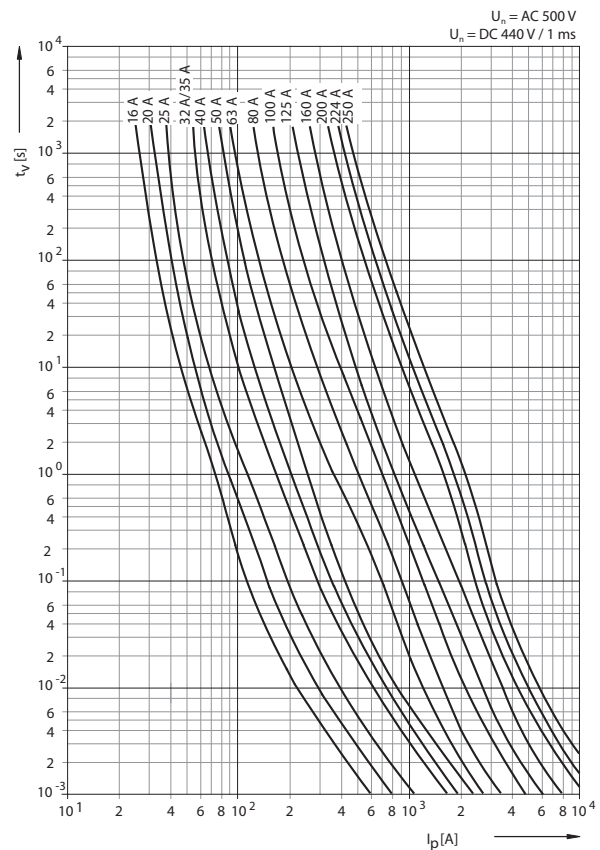
Size	I <sub>n</sub> [A]		Dimensions									
	gG	aM	a1	a2	a3	a4	b (min.)	c1	d	e1	e2	f
<b>000</b>	6 ÷ 160	6 ÷ 100	79.9	53.8	45.7	50.3	15.0	35.8	2.3	40.5	21.0	7.8
<b>00</b>	125 ÷ 160	100 ÷ 160	79.9	53.8	45.9	50.3	15.0	35.8	2.2	48.0	30.0	14.6
<b>1(01)</b>	16 ÷ 160	63 ÷ 100	136.8	72.5	64.6	69.0	15.0	39.8	2.2	48.0	30.0	14.6
<b>1</b>	200 ÷ 250	125 ÷ 250	136.3	74.7	63.6	69.8	20.0	40.8	3.1	47.2	47.2	9.6
<b>2(02)</b>	35 ÷ 250	125 ÷ 250	151.3	74.7	63.6	69.8	20.0	48.3	3.1	47.2	47.2	9.6
<b>2</b>	315 ÷ 400	315 ÷ 400	151.3	74.4	63.3	69.5	25.0	48.5	3.1	57.8	57.8	12.8
<b>3(03)</b>	200 ÷ 400	315 ÷ 400	151.3	74.4	63.3	69.5	25.0	60.4	3.1	57.8	57.8	12.8
<b>3</b>	500 ÷ 630	500 ÷ 630	151.0	74.0	64.0	69.0	32.0	60.0	2.5	71.2	71.2	12.8
<b>4a</b>	630 ÷ 1600	-	200±3	86.5	84±3	90±3	50.0	85±2	3.0	102.0	87.0	30.0

## Characteristics

Prearcing time/current characteristic  
PNA000.00 gG



Prearcing time/current characteristic  
PNA1 gG





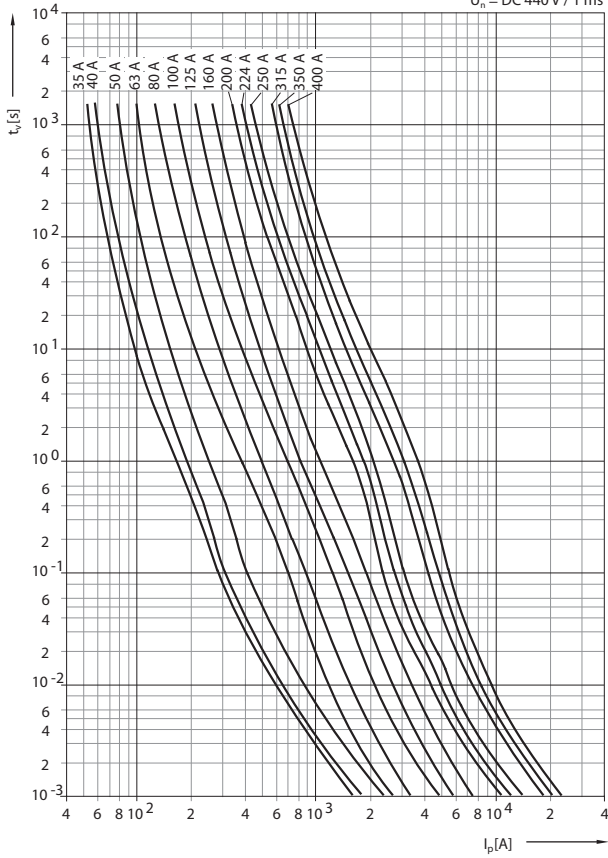
# FUSE-LINKS WITH BLADE CONTACTS PNA

## Characteristics

Preaming time/current characteristic

**PNA2 gG**

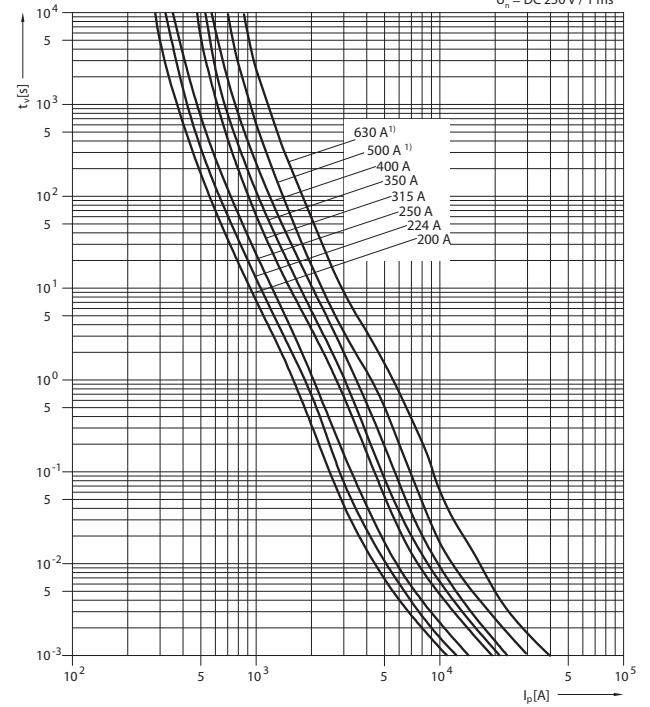
$U_n = AC 500 V$   
 $U_n = DC 440 V / 1 ms$



Preaming time/current characteristic

**PNA3, PN3<sup>1)</sup> gG**

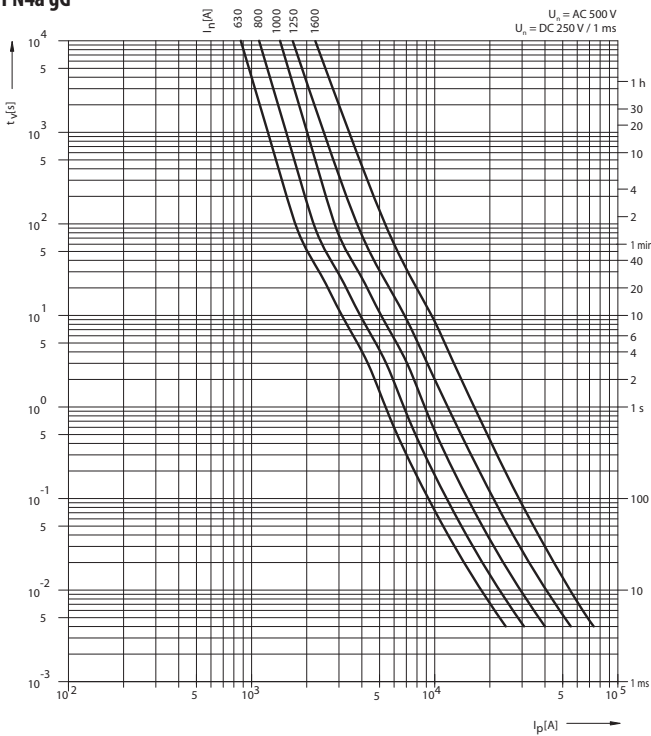
$U_n = AC 500 V$   
 $U_n = DC 440 V / 1 ms$   
 $U_n = DC 250 V / 1 ms^{(1)}$



Preaming time/current characteristic

**PN4a gG**

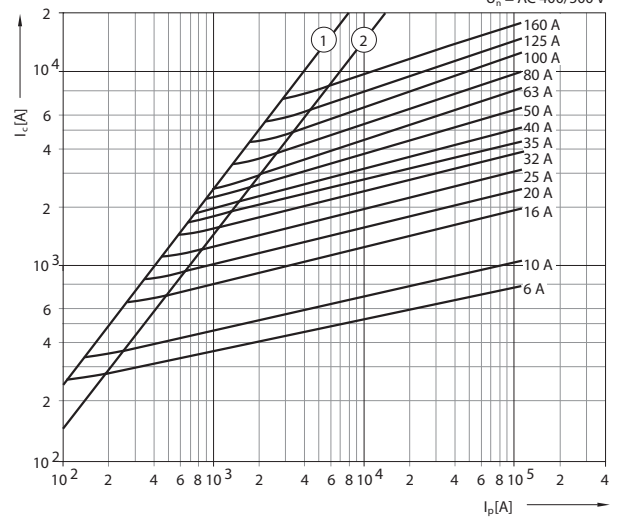
$U_n = AC 500 V$   
 $U_n = DC 250 V / 1 ms$



Cut-off characteristic

**PNA000. 00 gG**

$U_n = AC 400/500 V$



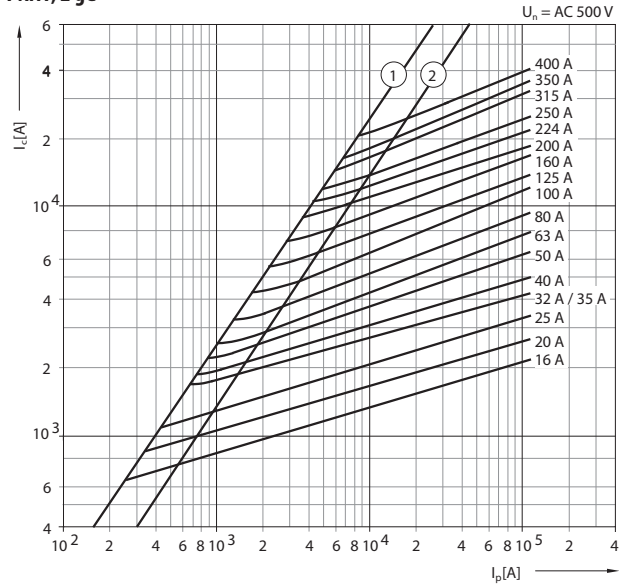


# FUSE-LINKS WITH BLADE CONTACTS PNA

## Characteristics

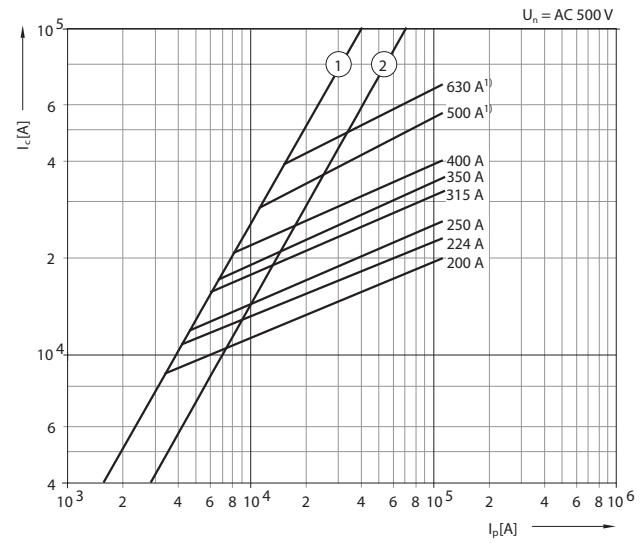
Cut-off characteristic

**PNA1, 2 gG**



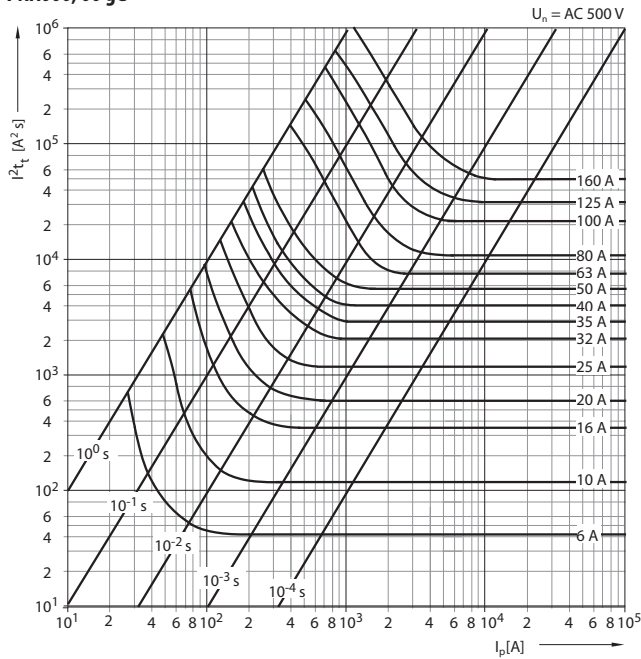
Cut-off characteristic

**PNA3, PN3 1) gG**



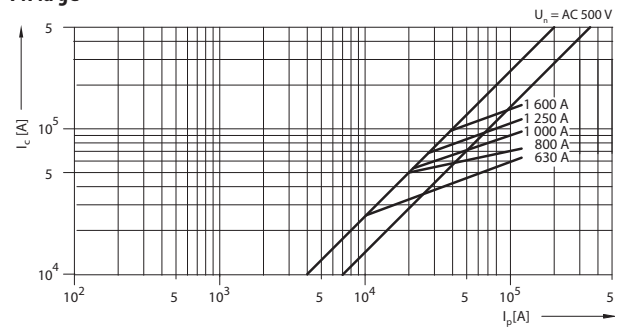
$I^2t_c$  characteristic

**PNA000, 00 gG**



Cut-off characteristic

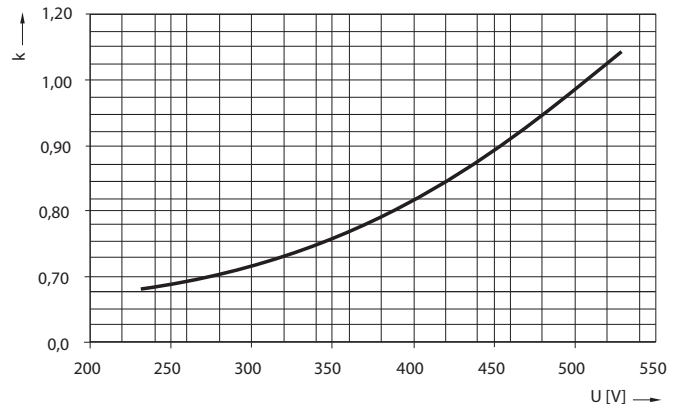
**PN4a gG**



Correction factor „k“ of  $I^2t_c$  dependence on operating voltage

$$(I^2t_c)_{(U)} = k \times I^2t_c$$

**PNA000, 00, 1, 2, 3, PN3 a PN4a gG**



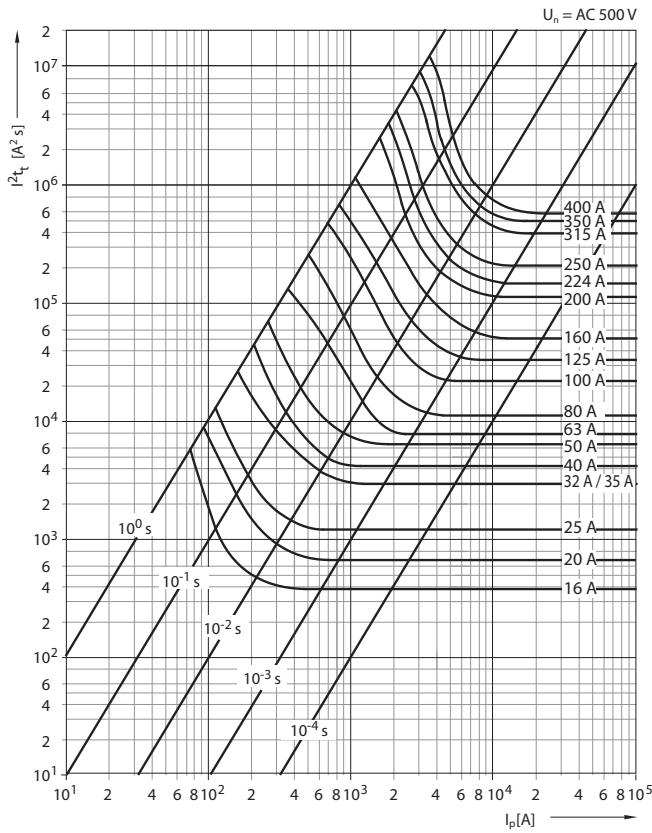
$I^2t$ ,  $I^2t_c$  values

$I^2t$	$I^2t_t$		$I^2t_c$	
	1 ms [A <sup>2</sup> s]	4 ms [A <sup>2</sup> s]	AC 400 V [A <sup>2</sup> s]	AC 500 V [A <sup>2</sup> s]
PNA000 6A gG	46	48	142	185
PNA000 10A gG	120	127	307	382
PNA000 16A gG	370	462	782	892
PNA000 20A gG	670	854	1 486	1 706
PNA000 25A gG	1 200	1 400	2 214	2 483
PNA000 32A gG	2 200	2 500	3 821	4 248
PNA000 35A gG	3 000	3 440	3 883	4 002
PNA000 40A gG	4 000	4 980	7 964	8 955
PNA000 50A gG	6 000	6 960	11 085	12 453
PNA000 63A gG	7 700	10 500	17 961	20 476
PNA000 80A gG	12 000	16 200	30 394	35 572
PNA000 100A gG	24 000	30 300	50 922	57 979
PNA000 125A gG	46 000	45 000	117 000	145 000
PNA000 160A gG	89 000	82 100	166 000	-
PNA00 125A gG	36 000	46 900	89 004	104 464
PNA00 160A gG	58 000	82 100	144 428	166 333

# FUSE-LINKS WITH BLADE CONTACTS PNA

## Characteristics

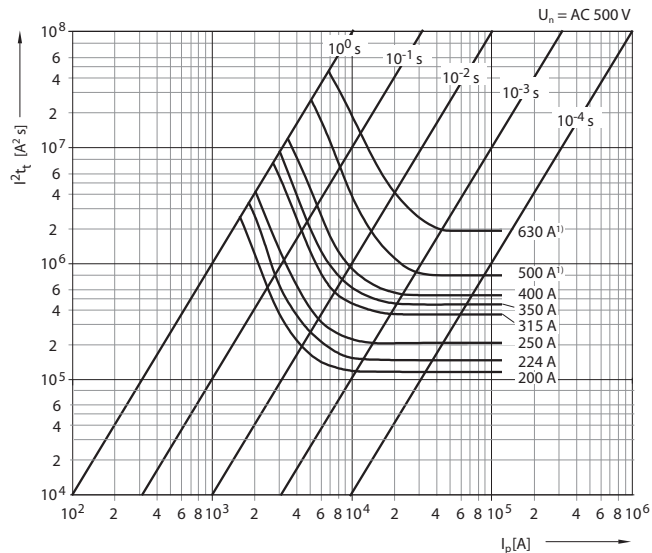
$I^2t$  characteristic  
PNA1, 2 gG



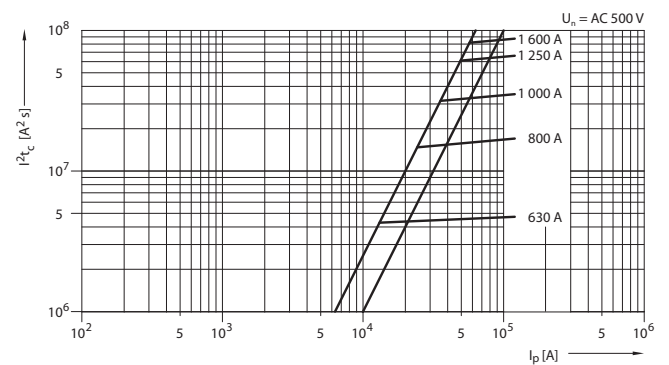
$I^2t, I^2t_c$  values

$I^2t$	$I^2t_c$		$I^2t_c$	
	1 ms [A²s]	4 ms [A²s]	AC 400 V [A²s]	AC 500 V [A²s]
PNA1 16A gG	370	456	750	1 000
PNA1 20A gG	670	810	1 660	1 990
PNA1 25A gG	1 200	1 510	2 960	3 510
PNA1 32A gG	2 540	3 300	5 750	6 900
PNA1 35A gG	3 000	3 510	6 520	7 610
PNA1 40A gG	4 000	5 120	9 100	10 500
PNA1 50A gG	6 000	6 880	14 100	16 800
PNA1 63A gG	7 700	9 790	18 400	21 500
PNA1 80A gG	12 000	15 600	35 800	44 000
PNA1 100A gG	24 000	32 900	55 700	63 500
PNA1 125A gG	36 000	48 300	83 300	95 500
PNA1 160A gG	58 000	80 200	148 000	173 000
PNA1 200A gG	115 000	124 000	273 000	332 000
PNA1 224A gG	145 000	156 000	368 000	456 000
PNA1 250A gG	205 000	222 000	485 000	590 000
PNA2 35A gG	3 000	3 510	6 440	7 490
PNA2 40A gG	4 000	5 120	9 000	12 100
PNA2 50A gG	6 000	7 030	14 900	17 900
PNA2 63A gG	7 700	9 620	21 900	27 000
PNA2 80A gG	12 000	15 600	35 800	44 000
PNA2 100A gG	24 000	32 800	61 200	71 000
PNA2 125A gG	36 000	47 300	91 800	108 000
PNA2 160A gG	58 000	79 500	148 000	173 000
PNA2 200A gG	115 000	124 000	273 000	332 000
PNA2 224A gG	145 000	156 000	368 000	456 000
PNA2 250A gG	205 000	253 000	482 000	567 000
PNA2 315A gG	361 000	440 000	857 000	1 012 000
PNA2 350A gG	441 000	597 000	1 003 000	1 142 000
PNA2 400A gG	529 000	750 000	1 400 000	1 637 000
PNA3 200A gG	115 000	124 000	273 000	332 000
PNA3 224A gG	145 000	156 000	368 000	456 000
PNA3 250A gG	205 000	253 000	482 000	567 000
PNA3 315A gG	361 000	425 000	836 000	990 000
PNA3 350A gG	441 000	563 000	977 000	1 122 000
PNA3 400A gG	529 000	707 000	1 364 000	1 608 000
PNA3 500A gG	790 000	1 000 000	2 350 000	2 682 000
PN3 630A gG	1 500 000	1 900 000	4 100 000	4 750 000

$I^2t$  characteristic  
PNA3, PN3 <sup>1)</sup> gG



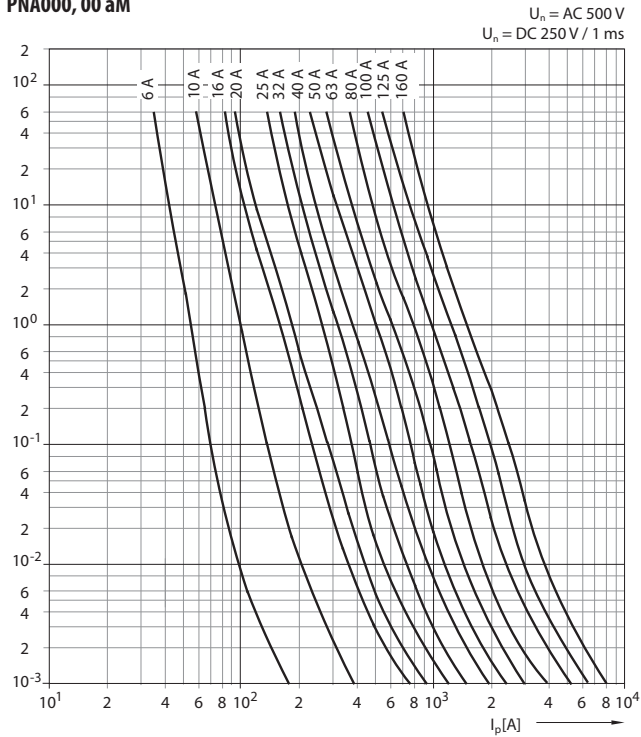
$I^2t$  characteristic  
PN4a gG



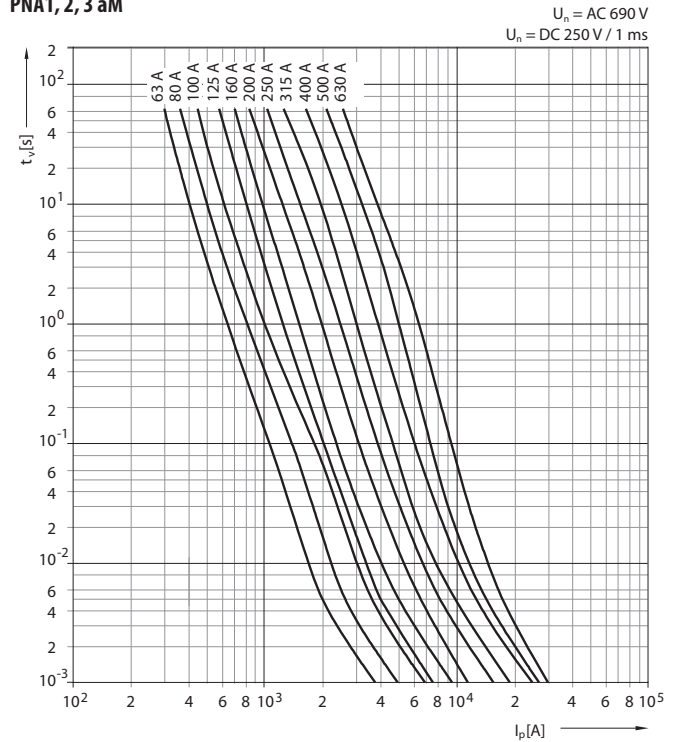
# FUSE-LINKS WITH BLADE CONTACTS PNA

## Characteristics

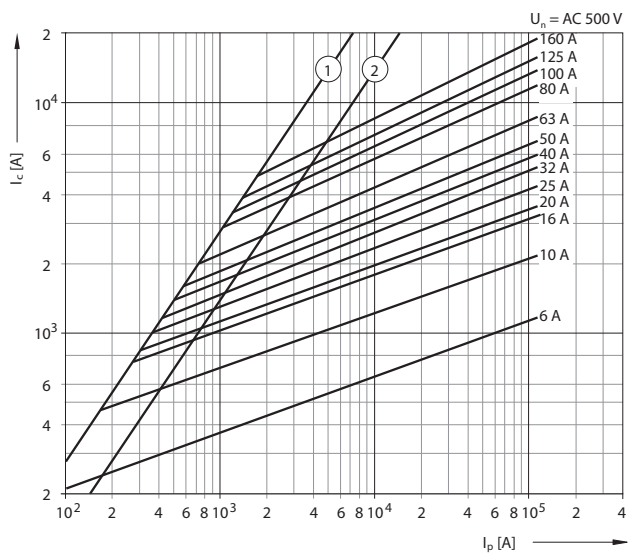
Prearing time/current characteristic  
**PNA000, 00 aM**



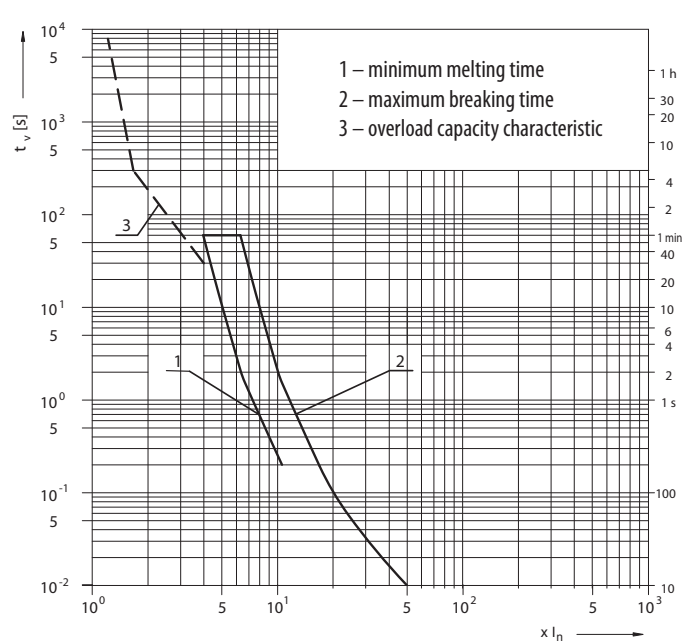
Prearing time/current characteristic  
**PNA1, 2, 3 aM**



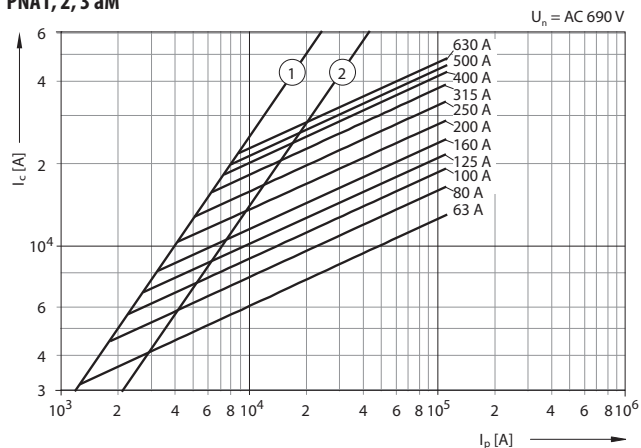
Cut-off characteristic  
**PNA000, 00 aM**



Time/current ranges  
**PNA000, 00, 1, 2, 3 aM**



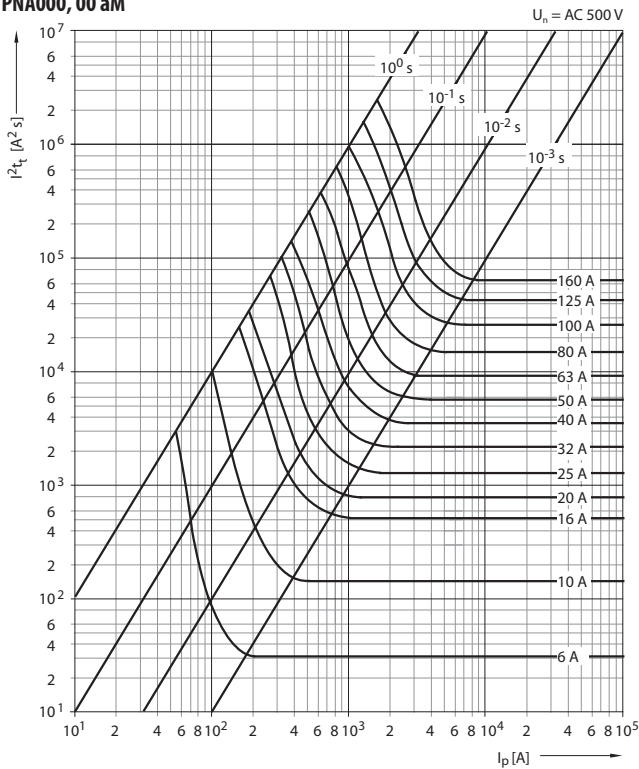
Cut-off characteristic  
**PNA1, 2, 3 aM**



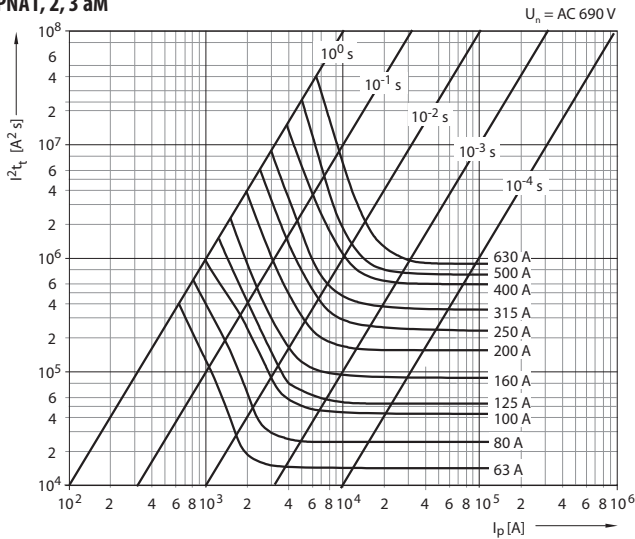
# FUSE-LINKS WITH BLADE CONTACTS PNA

## Characteristics

$I^2t$  characteristic  
PNA000, 00 aM



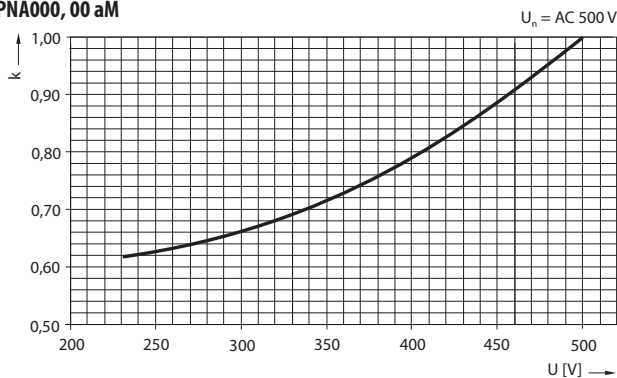
$I^2t$  characteristic  
PNA1, 2, 3 aM



Correction factor „k“ of  $I^2t_c$  dependence on operating voltage

$$(I^2t_c)_{(U)} = k \times I^2t_c$$

PNA000, 00 aM



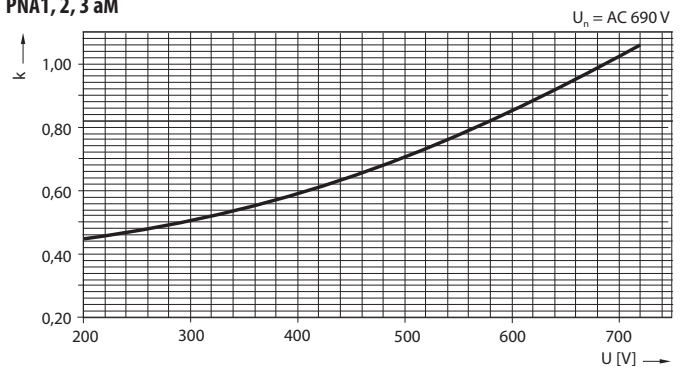
$I^2t_c, I^2t_{ac}$  values

$I^2t_c$	$I^2t_{ac}$		$I^2t_c$	
	1 ms [A²s]	4 ms [A²s]	AC 400 V [A²s]	AC 500 V [A²s]
PNA000 6A aM	32	55	75	110
PNA000 10A aM	150	260	320	430
PNA000 16A aM	570	800	1 300	1 600
PNA000 20A aM	830	1 200	1 600	2 200
PNA000 25A aM	1 400	2 000	2 800	3 300
PNA000 32A aM	2 300	3 300	4 500	5 400
PNA000 40A aM	3 700	5 500	7 200	9 300
PNA000 50A aM	5 800	8 400	9 891	12 500
PNA000 63A aM	9 300	13 000	16 617	21 000
PNA000 80A aM	15 000	21 000	27 000	34 000
PNA000 100A aM	26 000	37 000	56 000	76 000
PNA000 125A aM	41 000	60 000	98 000	135 000
PNA000 160A aM	64 000	92 000	130 000	170 000
PNA1 63A aM	14 000	17 700	25 600	42 000
PNA1 80A aM	24 200	30 800	48 000	80 000
PNA1 100A aM	45 600	59 000	85 000	140 000
PNA1 125A aM	57 000	74 300	97 000	160 000
PNA1 160A aM	90 000	114 000	142 000	235 000
PNA1 200A aM	150 000	198 000	228 000	375 000
PNA1 250A aM	250 000	313 000	340 000	565 000
PNA2 125A aM	57 000	74 300	97 000	160 000
PNA2 160A aM	90 000	114 000	142 000	235 000
PNA2 200A aM	150 000	198 000	228 000	375 000
PNA2 250A aM	250 000	313 000	340 000	565 000
PNA2 315A aM	370 000	450 000	610 000	1 000 000
PNA2 400A aM	615 000	750 000	910 000	1 500 000
PNA3 315A aM	370 000	450 000	610 000	1 000 000
PNA3 400A aM	615 000	750 000	910 000	1 500 000
PNA3 500A aM	730 000	933 000	1 095 000	1 825 000
PNA3 630A aM	920 000	1 375 000	1 800 000	2 600 000

Correction factor „k“ of  $I^2t_c$  dependence on operating voltage

$$(I^2t_c)_{(U)} = k \times I^2t_c$$

PNA1, 2, 3 aM



ACCESSORIES FOR PNA, PHNA





Disconnecting links

- They are used wherever it is necessary to disconnect power supply or for various reasons to replace fuse-link (in measuring etc.).
- They are used in fuse switch-disconnectors, fuse-rails and fuse-bases.

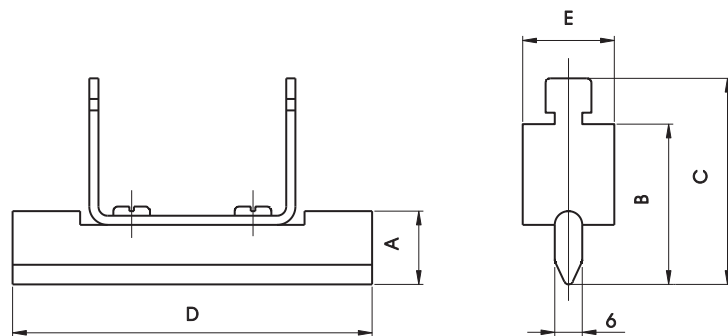
$I_n$ [A]	Type	Order code	Size	Weight [kg]	Package [pcs]
160	ZP000 <sup>1)</sup>	OEZ:06401	000, 00	0.09	3
250	ZP1	OEZ:06402	1	0.17	3
400	ZP2	OEZ:06403	2	0.23	3
630	ZP3	OEZ:06404	3	0.29	3
1000	ZP3/1000	OEZ:10442	3	0.35	3
1250	TM4a/1250A	OEZ:10446	4a	1.58	1
1600	TM4a/1600A	OEZ:14801	4a	1.60	1

<sup>1)</sup> Can be used in fuse switch-disconnectors of size 000, 00 and fuse-bases size 00

Specifications

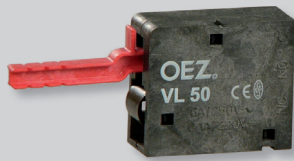
Type	ZP..
Standards	EN 60269-1, -2; DIN 43 620
Approval marks	 

Dimensions



Type	Dimensions [mm]				
	A	B	C	D	E
ZP000	15	35	45	78.5	20.0
ZP1	20	40	50	135.0	20.0
ZP2	25	48	58	150.0	20.0
ZP3	32	60	70	150.0	20.0
ZP3/1000	40	60	70	150.0	20.0
TM4a/1250A	50	89	98	200.0	30.0
TM4a/1600A	50	108	118	200.0	44.5

## ACCESSORIES FOR PNA, PHNA



### Signal contact

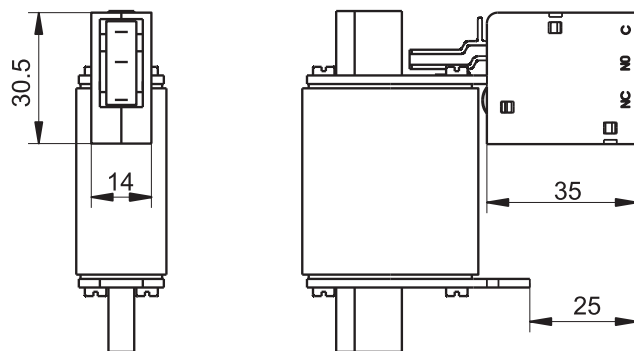
- For all types and sizes of fuse-links with blade contacts up to AC 690 V / DC 440 V.
- Fuse-links are equipped with visual state indicator installed on the upper fuse holder, which can be used as a releasing device for the signal contact VL50 for remote signalling of fuse-link state.
- Connection is performed by means of sleeves on flat connector wide 2.8 mm.

Type	Order code	Weight [kg]	Package [pcs]
VL50	OEZ:06528	0.015	1

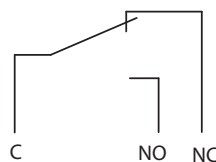
### Specifications

Type	VL50		
Approval marks			
Rated insulation voltage	$U_i$	2 kV	
Rated current/voltage of contacts	5 A / AC 125 V		0.1 A / DC 30 V

### Dimensions



### Diagram



State of contacts with installed signal contact VL50 on the fuse-link:  
fuse not blown → contacts C – NC closed.

ACCESSORIES FOR PNA, PHNA



Electronic signalling of fuse state

- Can be used for fuse-links of all types and sizes.
- Monitoring of fuse-links state in fuse switch-disconnectors and fuse-bases.
- Auxiliary contact without power supply contact opened.  
Auxiliary contact with power supply contact closed.  
Fuse-link blowing in the circuit contact opened.
- The devices are designed as modular for 45 mm cutout in the switchboard cover plate.
- Mounting on "U" rails according to EN 60715 (steel rail recommended).

Type	Order code	Weight [kg]	Package [pcs]
MD-M3	OEZ:38614	0.15	1

Specifications

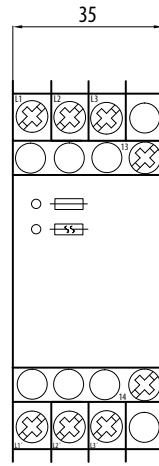
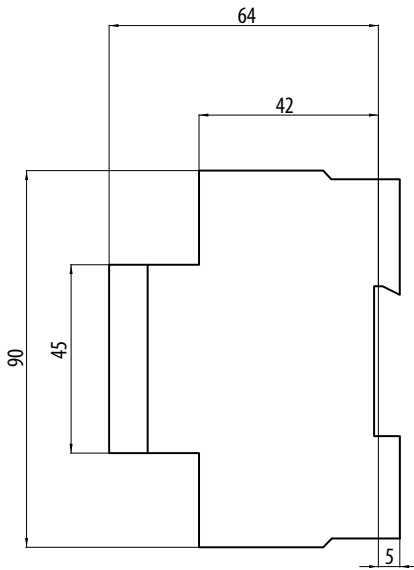
Type	MD-M3	
Standards	IEC 60255 DIN VDE 435-110	
Approval marks	CE	
Rated operating voltage	$U_e$	AC 250 V
Rated operating current	$I_e$	4 A
Rated control voltage	$U_c$	AC 3x 415 V
Operating range	0.8 ÷ 1.1 x $U_e$	
Rated frequency	50 ÷ 400 Hz	
Input impedance	> 1 000 $\Omega/V$	
Maximum permitted backwards power supply	90 %	
Response/release time	< 50 ms	
Rated impulse withstand voltage	$U_{imp}$	> 4 kV
Electrical endurance	AC-15	1.5x 10 <sup>3</sup>
Mechanical endurance	> 10 <sup>6</sup>	
Degree of protection barrel/terminal block	IP40/IP20	
Number of contacts	1	
Connection cross-section	solid	max. 2x 2.5 mm <sup>2</sup>
	stranded with end sleeve	min. 1x 0.5 mm <sup>2</sup>
Operating ambient temperature	-20 ÷ +60 °C	
Climatic resistance according	to EN 60068-1	20/060/04

<sup>1)</sup> The internal resistance of measuring circuits of the fuse monitor in the M $\Omega$  range, therefore when there is fuse missing or it is defective the conditions of contact voltage are still kept (according to EC 974-1, internal resistance >2 000  $\Omega/V$ ). In order to switch off the device the main back-up circuit breaker has to be disconnected.

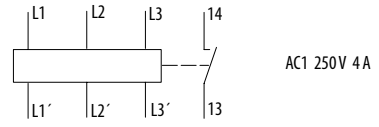


## ACCESSORIES FOR PNA, PHNA

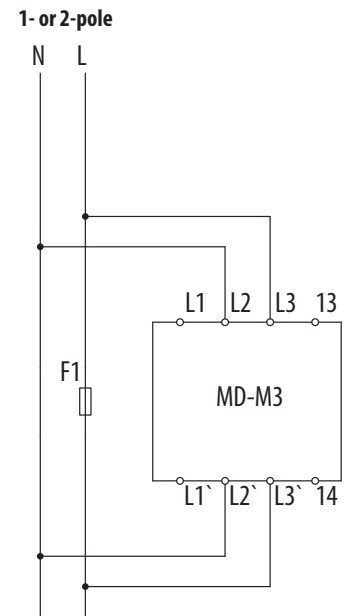
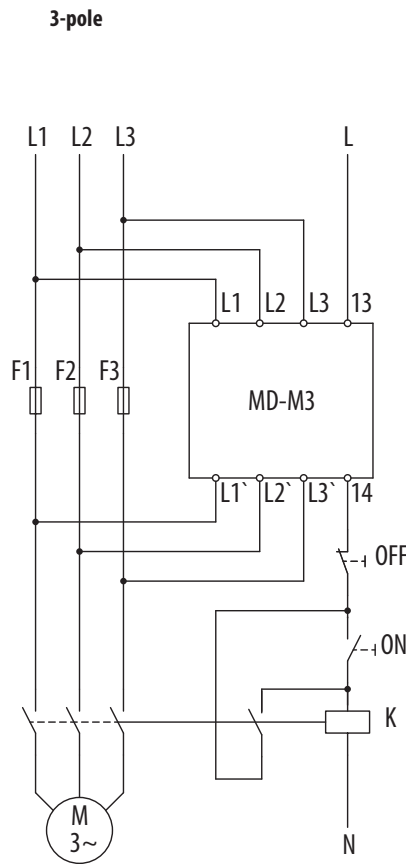
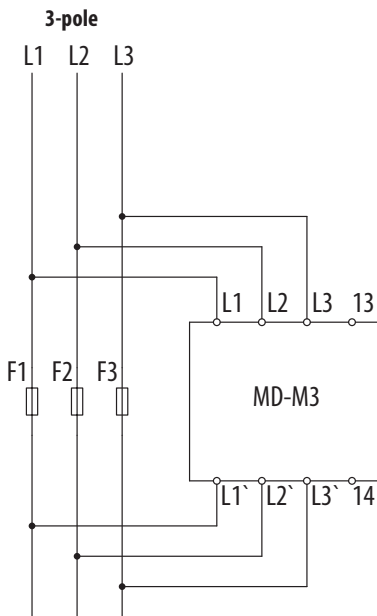
### Dimensions



### Diagram



### Connection



<sup>1)</sup> It is possible to check the second fuse-link in the same or different phase at the terminals L3-L3'.

Application from practice, e.g. automatic disconnection and lock of turning-on of the three-phase motor when there is drop-out of one or several fuse-links.

ACCESSORIES FOR PNA, PHNA



Replacement handles

- Are used for fuse-links handling under voltage but without current.
- D1PH - it is equipped with insulating end barriers to prevent accidental contact, mainly if barriers are not used between fuse-bases. It is intended for single-pole fuse-bases without end barriers.
- DP - it is intended for handling fuse-links in both single and three-pole fuse-bases, which are equipped with insulating barriers.
- DPM - the replacement handle with a protective sleeve to increase the safety of personnel in handling fuse-links. The sleeve is made from beef leather.

Type	Order code	Weight [kg]	Package [pcs]
D1PH	OEZ:06405	0.52	1
DP	OEZ:07372	0.20	1
DPM	OEZ:07373	0.52	1

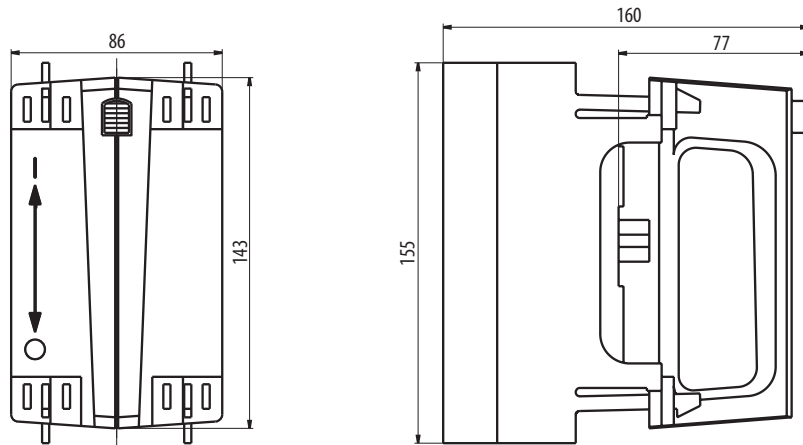
Specifications

Type	D1PH	DP	DPM
Standards	IEC 60269-1, -2;	IEC 60269-1, -2; EN 60269-1, -2	IEC 60269-1, -2; EN 60269-1, -2
Approval marks	SP CE	SP CE	SP CE
Rated insulation voltage $U_i$	AC 1 000 V	AC 1 000 V	AC 1 000 V
Fuse-link size	000, 00, 1, 2, 3	000, 00, 1, 2, 3	000, 00, 1, 2, 3

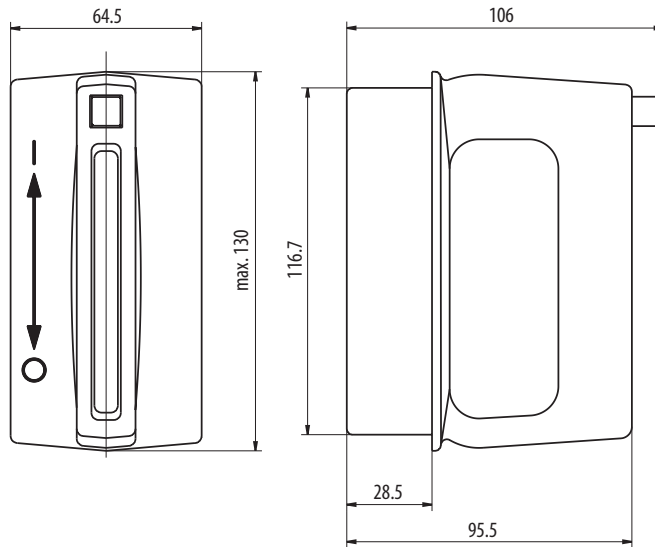
**ACCESSORIES FOR PNA, PHNA**

**Dimensions**

D1PH



DP



DPM

