fuse-links & fuse holders

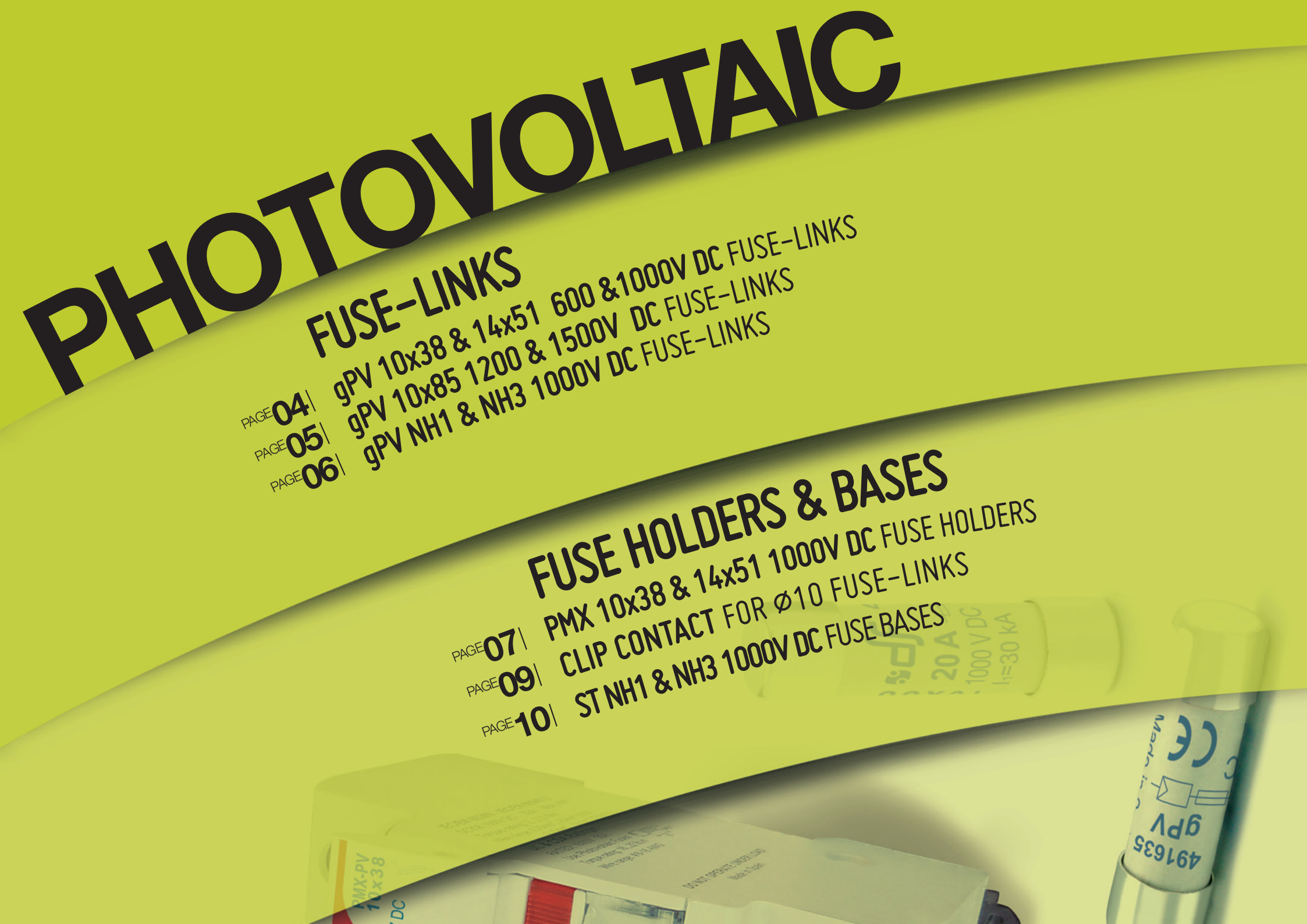
PHOTOVOLTAIC


PMX-14x51
50A
1000V DC
485252
NH3
630A 1000V DC
354180
Made in Spain
NH3 gPV
315 A
1000V DC
I1= 30 kA
IEC 60269-6
373445
RoHS COMPLIANT
Made in Spain
NH1 gPV
100 A
1000V DC
I1= 30 kA
IEC 60269-6
373245
RoHS COMPLIANT
Made in Spain
10x38
32A
600V DC
I1=30 kA
32A 1000V
485150

PHOTOVOLTAIC

FUSE-LINKS

FUSE HOLDERS & BASES



PHOTOVOLTAIC FUSE-LINKS

gPV FUSE-LINKS FOR PHOTOVOLTAIC APPLICATIONS

PV fuse-links for photovoltaic installations from DF Electric have been developed to offer a compact, safety and economic protection solution in photovoltaic installations where, due to the increase of the power and technologic evolution, no-load voltages above 800V DC are reached. Also meet the requirements for instruments (multimeters) and traction equipment auxiliary circuits. The range comprises 10x38 & 14x51 fuse-links with rated currents between 1A and 20A. Rated voltage is 600 V DC or 1000V DC (direct current). Provide protection against overloads as well as short-circuits. Made with ceramic tube with high withstand to internal pressure and thermal shock, that allows a high breaking capacity in a reduced physical space. Contacts are made of silver plated copper and melting elements are made of pure silver in order to avoid the aging and thus keep unalterable the electric characteristics. For these fuse-links we recommend the utilization of PMX 1000V fuse holders in single pole version or two-pole version.

www.df-sa.es/photovoltaic/fuses/

10x38 — 1000V DC

In (A)	REFERENCE	BREAKING CAPACITY (kA)	PACKING Uni./BOX
1	**491601**	30	10/100
2	**491602**	30	10/100
3	**491604**	30	10/100
4	**491605**	30	10/100
5	**491606**	30	10/100
6	**491610**	30	10/100
8	**491615**	30	10/100
10	**491620**	30	10/100
12	**491625**	30	10/100
15	**491629**	30	10/100
16	**491630**	30	10/100
20	**491635**	30	10/100

600V DC

In (A)	REFERENCE	BREAKING CAPACITY (kA)	PACKING Uni./BOX
1	**491901**	30	10/100
2	**491902**	30	10/100
3	**491904**	30	10/100
4	**491905**	30	10/100
5	**491906**	30	10/100
6	**491910**	30	10/100
8	**491915**	30	10/100
10	**491920**	30	10/100
12	**491925**	30	10/100
15	**491929**	30	10/100
16	**491930**	30	10/100
20	**491935**	30	10/100
25	**491940**	30	10/100
30	**491944**	30	10/100
32	**491945**	30	10/100

14x51 — 1000V DC

In (A)	REFERENCE	BREAKING CAPACITY (kA)	PACKING Uni./BOX
25	**491650**	30	10/50
32	**491655**	30	10/50

STANDARDS: IEC 60269-1, IEC 60269-6, UL 2579

APPROVALS: Cd-Pb FREE, RoHS compliant

TECHNICAL — t-I CHARACTERISTICS — PAGE 11

TECHNICAL — AMBIENT TEMPERATURE DERATING FACTOR — PAGE 14

COMPATIBLE — PV FUSE HOLDERS FOR PHOTOVOLTAIC APPLICATIONS — PAGE 07

COMPATIBLE — CLIP CONTACT FOR Ø10 FUSE-LINKS — PAGE 09

PHOTOVOLTAIC FUSE-LINKS

gPV FUSE-LINKS FOR PHOTOVOLTAIC APPLICATIONS

10x85

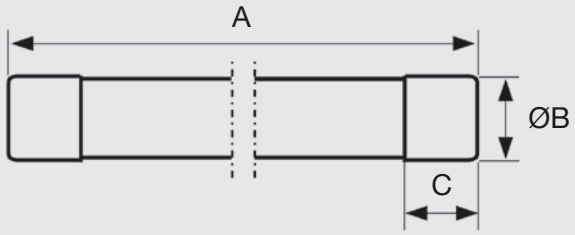
	I_n (A)	REFERENCE	BREAKING CAPACITY (kA)	PACKING Uni./BOX
1500V DC	2	**492202**	10	4/24
	4	**492205**	10	4/24
	6	**492210**	10	4/24
	8	**492215**	10	4/24
	10	**492220**	10	4/24
	12	**492225**	10	4/24
1200V DC	16	**492230**	10	4/24
	20	**492235**	10	4/24
	25	**492240**	10	4/24

492225

TECHNICAL

gPV FUSE-LINKS FOR PHOTOVOLTAIC APPLICATIONS
DIMENSIONS

10x38
14x51
10x85



SIZE	A	B	C
10x38	38	10,3	10
14x51	51	14,3	10
10x85	85	10,3	10

STANDARDS
IEC 60269-1
IEC 60269-6
UL 2579

APPROVALS
Cd-Pb FREE
RoHS compliant

TECHNICAL
t-I CHARACTERISTICS
PAGE 12

TECHNICAL
AMBIENT TEMPERATURE DERATING FACTOR
PAGE 14

COMPATIBLE
CLIP CONTACT FOR Ø10 FUSE-LINKS
PAGE 09

PHOTOVOLTAIC
FUSE-LINKS

gPV FUSE-LINKS FOR PHOTOVOLTAIC APPLICATIONS

NH

1000V DC

NH gPV 1000V DC fuse-links for photovoltaic installations have been developed to offer a compact, safety and economic protection solution in second level panels of photovoltaic installations. The range comprises NH1 fuse-links with rated currents between 25A and 160A, and NH3 fuse-links with rated currents between 200A and 315 A. Rated voltage is 1000V DC (direct current). They provide protection against overloads as well as short-circuits (gPV class according to IEC 60269 Standard), with a minimum fusing current of 1,35·In. Made with ceramic body with high withstand to internal pressure and thermal shock. Contacts are made of silver plated copper and melting elements are made of pure silver in order to avoid the aging and thus keep unalterable the electric characteristics. For these fuse-links we recommend the utilization of 1000V NH ST fuse bases.

www.df-sa.es/photovoltaic/fuses/NH/

	In (A)	REFERENCE	BREAKING CAPACITY (kA)	PACKING Uni./BOX
NH1	25	**373210**	30	1/30
	32	**373215**	30	1/30
	40	**373225**	30	1/30
	50	**373230**	30	1/30
	63	**373235**	30	1/30
	80	**373240**	30	1/30
	100	**373245**	30	1/30
	125	**373250**	30	1/30
	160	**373255**	30	1/30
NH3	200	**373425**	30	1/15
	250	**373435**	30	1/15
	315	**373445**	30	1/15

373255

NEW

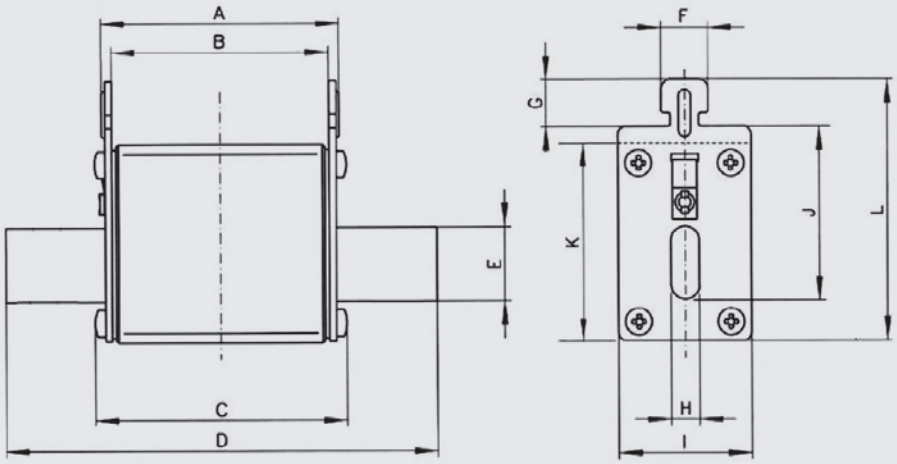
373445

TECHNICAL

gPV FUSE-LINKS FOR PHOTOVOLTAIC APPLICATIONS
DIMENSIONS

NH1

NH3



SIZE	A	B	C	D	E	F	G	H	I	J	K	L
NH1	68	62	71,5	135	20	10	9,5	6	39	40	52	64
NH3	68	62	73	150	32	10	9,5	6	70	60	75	87

STANDARDS
IEC 60269-1
IEC 60269-6

APPROVALS
Cd-Pb FREE
RoHS compliant

TECHNICAL
t-I CHARACTERISTICS
PAGE 13

TECHNICAL
AMBIENT TEMPERATURE DERATING FACTOR
PAGE 14

COMPATIBLE
NH FUSE BASES FOR PHOTOVOLTAIC APPLICATIONS
PAGE 10

PHOTOVOLTAIC
FUSE HOLDERS

PMX 1000V DC — FUSE HOLDERS FOR PHOTOVOLTAIC APPLICATIONS

The first feature that PV Modular fuse holders offers, is the 1000V DC rated voltages. They have been developed to offer a compact, safety and economic protection solution in photovoltaic installations where due to the increase of the power and technologic evolution, no-load voltages above 800V DC can be achieved. Modular fuse holders for 10x38 & 14x51 gPV fuses according IEC/EN 60269 standard. Compact design, with reduced distances. Manufactured with a high quality materials: Silver plated copper contacts and plastic materials with high temperature resistance and selfextinguishable. All the materials are according to the European Directive 2002/95/EC RoHS (Restriction of the use of certain hazardous substances in electrical material).

www.df-sa.es/photovoltaic/fuseholders-and-fusebases/fuseholders/

10x38

	POLES	MODULES	REFERENCE	DESCRIPTION	I_n (A)	U (V DC)	PACKING Uni./BOX
WITHOUT INDICATOR	1	1	**485150**	SINGLE-POLE	32	1000	12/192
	2	2	**485151**	TWO-POLES	32	1000	6/96
WITH INDICATOR	1	1	**485152**	SINGLE-POLE	32	1000	12/192
	2	2	**485153**	TWO-POLES	32	1000	6/96

485152

14x51

	POLES	MODULES	REFERENCE	DESCRIPTION	I_n (A)	U (V DC)	PACKING Uni./BOX
WITHOUT INDICATOR	1	1,5	**485250**	SINGLE-POLE	50	1000	6/90
	2	3	**485251**	TWO-POLES	50	1000	3/45
WITH INDICATOR	1	1,5	**485252**	SINGLE-POLE	50	1000	6/90
	2	3	**485253**	TWO-POLES	50	1000	3/45

485252

STANDARDS
IEC 60269-1
IEC 60269-2
IEC 60947-3
EN 60269-1
EN 60269-2
EN 60947-3

APPROVALS
RoHS compliant

COMPATIBLE
gPV FUSE-LINKS FOR PHOTOVOLTAIC APPLICATIONS
PAGE 04

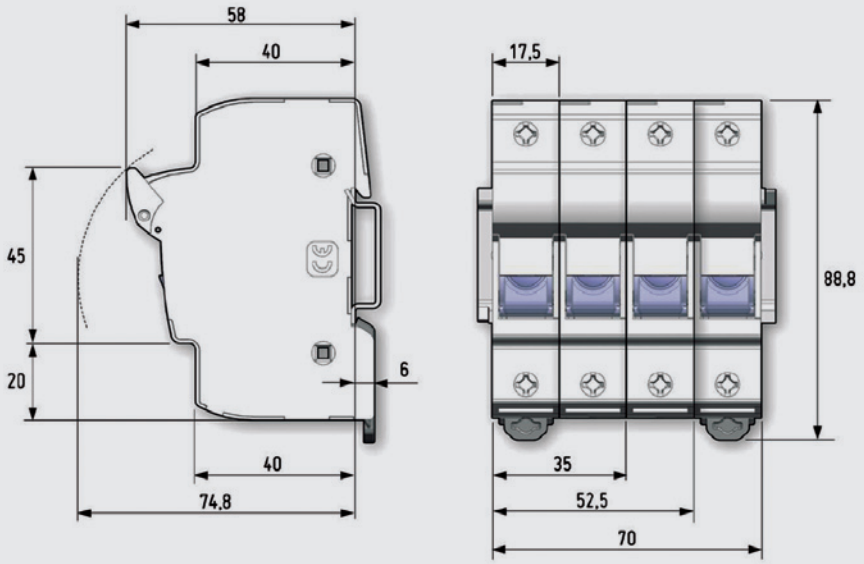
COMPATIBLE
CONNECTION ACCESSORIES: PHASE BUSBARS AND ACCESSORIES
SEE CYLINDRICAL
www.df-sa.es/cylindrical/fuse-holders/pmx/

PHOTOVOLTAIC
FUSE BASES

TECHNICAL
PV

FUSE HOLDERS FOR PHOTOVOLTAIC APPLICATIONS
DIMENSIONS

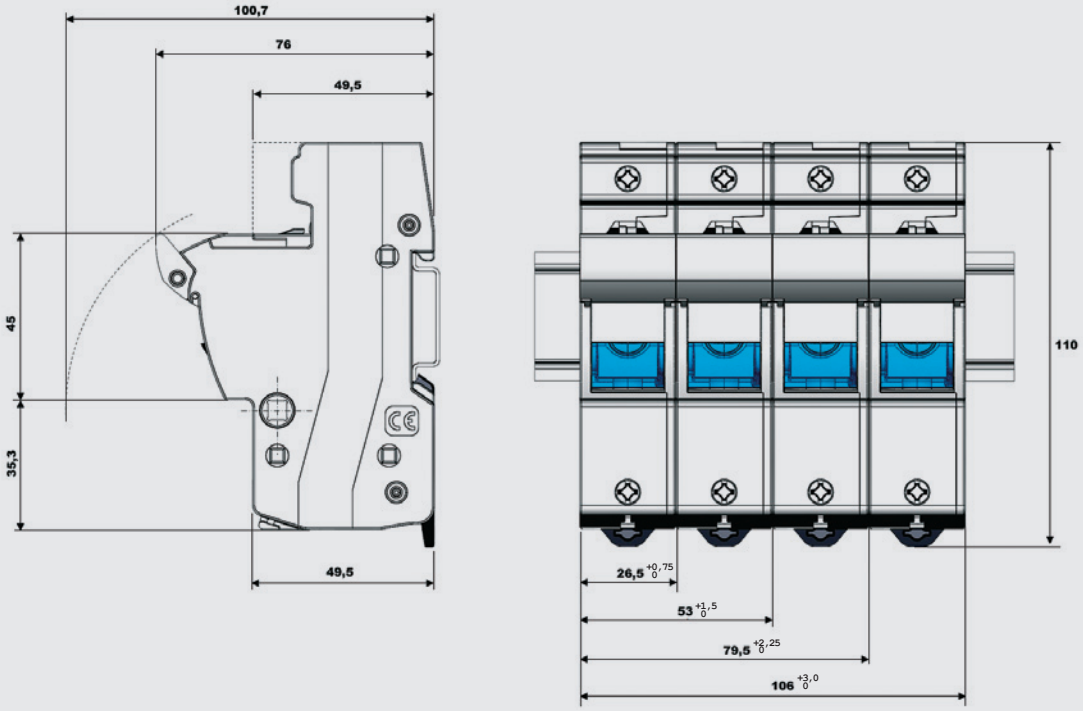
10x38



TECHNICAL
PV

FUSE HOLDERS FOR PHOTOVOLTAIC APPLICATIONS
DIMENSIONS

14x51



PHOTOVOLTAIC
FUSE BASES

CLIP CONTACT FOR Ø10 FUSE-LINKS NEW

Clip contact for Ø10 cylindrical fuse links. Screw fixation and PCB versions. Manufactured in tinned bronze. All the materials are according to the European Directive 2002/95/EC RoHS (Restriction of the use of certain hazardous substances in electrical material).

10x38
10x85

REFERENCE	DESCRIPTION	I_n (A)	P_d max (W)	PACKING Uni./BOX
482001	Ø10 CLIP CONTACT SCREW FIXATION	25	4	50/200
482002	Ø10 CLIP CONTACT FOR PCB	25	4	50/200


482001


482002

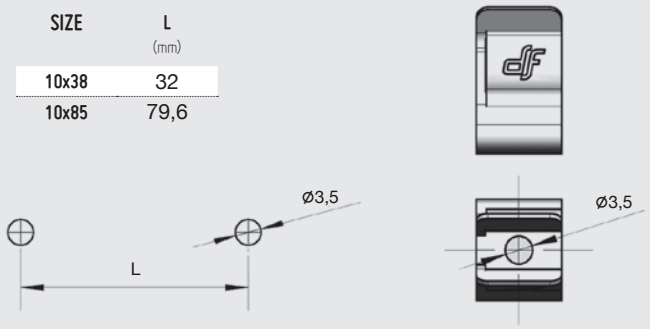
TECHNICAL

CLIP CONTACT FOR Ø10 FUSE-LINKS
DIMENSIONS

10x38
10x85

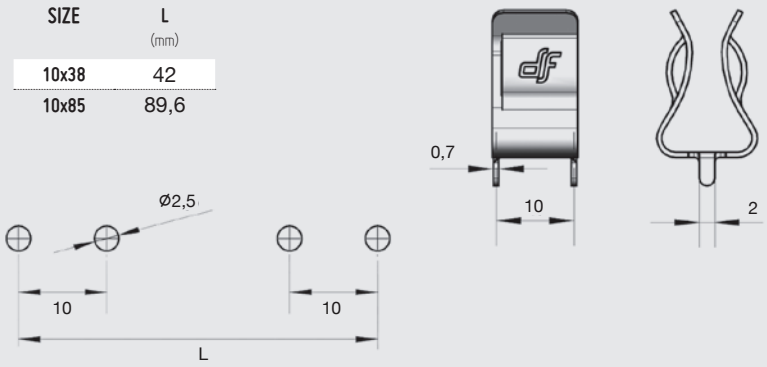
Ø10 CLIP CONTACT **SCREW FIXATION**

SIZE	L (mm)
10x38	32
10x85	79,6



Ø10 CLIP CONTACT **FOR PCB**

SIZE	L (mm)
10x38	42
10x85	89,6



PHOTOVOLTAIC
FUSE BASES

NH FUSE BASES FOR PHOTOVOLTAIC APPLICATIONS

NEW

ST 1000V DC

Fuse bases for NH fuse-links. Available in sizes NH1(250 A) and NH3(630 A). Manufactured with a high quality materials. Silver plated copper contacts. Plastic materials with high temperature resistance and self-extinguishable. All the materials are according to the European Directive 2002/95/EC RoHS. For DIN rail mounting or with screw fixing. Single-phase type. Connection by screws. Contacts with double spring in order to obtain an optimum operation. Wide range of accessories that enables IP20 protection index: contact covers, fuse link covers and partition walls. Multi-pole units can be made with connection accessories. Manufactured according IEC, VDE and DIN standards.

www.df-sa.es/photovoltaic/fuseholders-and-fusebases/fusebases/

354170

354180

	DESCRIPTION	REFERENCE	U (V DC)	PACKING
	SINGLE POLE			
NH1 250A	DIN RAIL-SCREW FIXING / SCREW CONNECTION	**354170**	1000	1
NH3 630A	DIN RAIL-SCREW FIXING / SCREW CONNECTION	**354180**	1000	1

NH FUSE BASES ACCESSORIES
MICROSWITCHES FOR NH LINKS

NH1 NH3

SIZE	REFERENCE	DESCRIPTION	PACKING Uni./BOX
CLASS 1	**357000**	MICROSWITCH FOR NH1 & NH3 FUSE-LINKS	1/100

357000

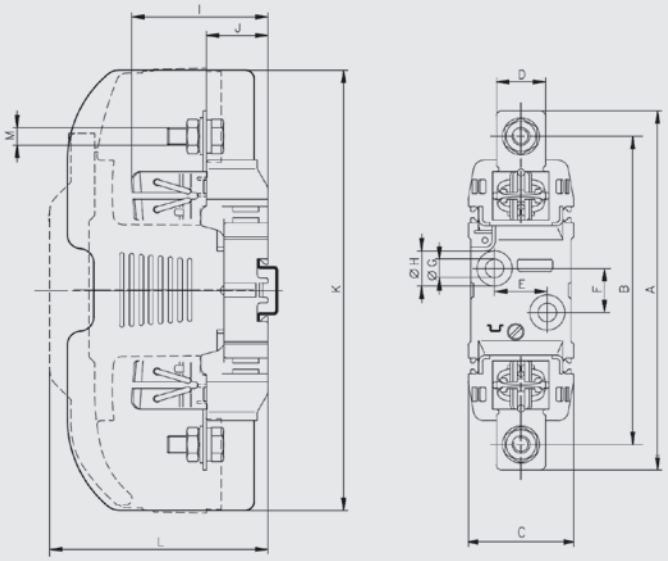
TECHNICAL

NH FUSE BASES FOR PHOTOVOLTAIC APPLICATIONS
DIMENSIONS

ST 1000V DC

NH1 250A

NH3 630A



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M
NH1	200	175	60	28	30	25	10,5	20,5	77,5	35	250	123	M10
NH3	240	210	60	38	30	25	10,5	20,5	97	35	270	143	M12

STANDARDS
IEC 60269-1
IEC 60269-2
EN 60269-1
EN 60269-2

STANDARDS
VDE 0636
DIN 43620

APPROVALS
RoHS compliant

COMPATIBLE
gPV NH1 & NH3 FUSE-LINKS FOR PHOTOVOLTAIC APPLICATIONS
PAGE 06

COMPATIBLE
TERMINAL COVERS, FUSE-LINKS COVERS AND IP20 PROTECTION KITS
SEE NH

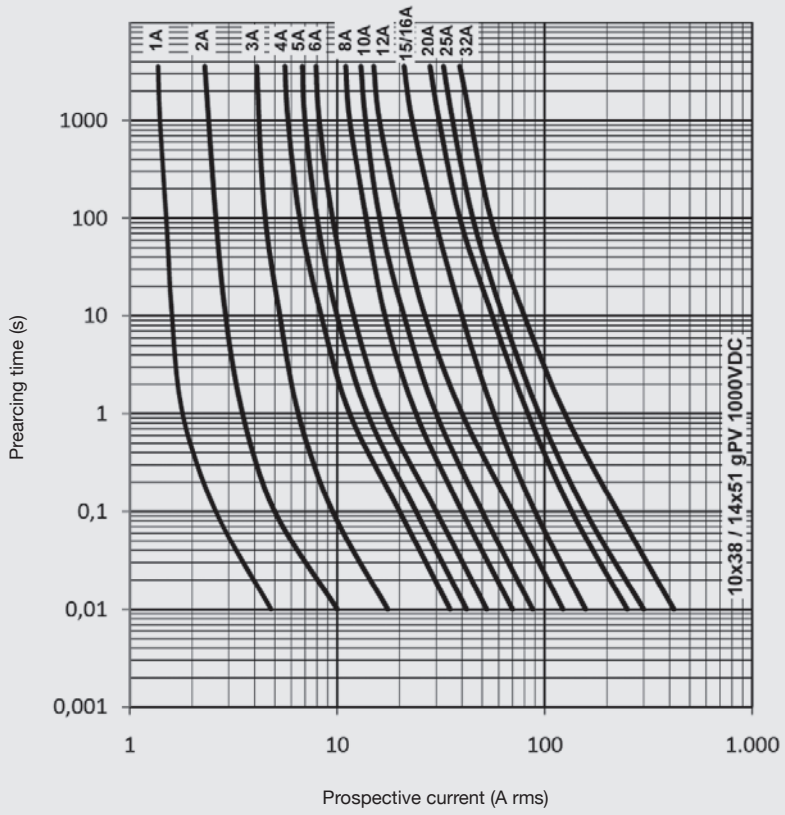
TECHNICAL

gPV FUSE-LINKS FOR PHOTOVOLTAIC APPLICATIONS

t-I CHARACTERISTICS & POWER DISSIPATION

10x38

14x51



	RATED CURRENT (A)	REFERENCE		POWER DISSIPATION (W @ 0,7 In)		POWER DISSIPATION (W @ In)		PREARCING I^2t (A^2s)		OPERATING I^2t (A^2s)	
		1000V DC	600V DC	1000V DC	600V DC	1000V DC	600V DC	1000V DC	600V DC	1000V DC	600V DC
10x38	1	**491601**	**491901**	0,31	0,31	0,76	0,76	0,35	0,35	1,3	0,8
	2	**491602**	**491902**	0,78	0,62	1,45	1,54	0,62	1,78	1,0	3,9
	3	**491604**	**491904**	0,66	0,54	1,66	1,35	1,9	9,0	3,1	19,6
	4	**491605**	**491905**	0,64	0,73	1,57	1,84	6,9	3,0	11	6,6
	5	**491606**	**491906**	0,60	0,93	1,65	2,22	14	4,4	22	9,6
	6	**491610**	**491910**	0,76	0,96	1,84	2,40	24	8,5	38	18,8
	8	**491615**	**491915**	0,80	1,02	1,92	2,55	62	25	99	55,0
	10	**491620**	**491920**	0,94	1,03	2,2	2,58	10	11	48	27,9
	12	**491625**	**491925**	0,98	1,04	2,4	2,60	18	25	94	62,8
	15	**491629**	**491929**	1,0	1,07	2,6	2,44	46	25	110	82,8
	16	**491630**	**491930**	1,1	1,08	2,7	2,70	46	33	110	82,8
	20	**491635**	**491935**	1,2	1,16	2,9	2,90	118	85	282	212
	25	–	**491940**	–	1,10	–	2,74	–	280	–	460
	30	–	**491944**	–	1,70	–	4,00	–	400	–	650
	32	–	**491945**	–	1,76	–	4,40	–	400	–	650
14x51	1	**491650**	–	1,6	–	3,8	–	275	–	650	–
	2	**491655**	–	2,0	–	4,7	–	550	–	1300	–

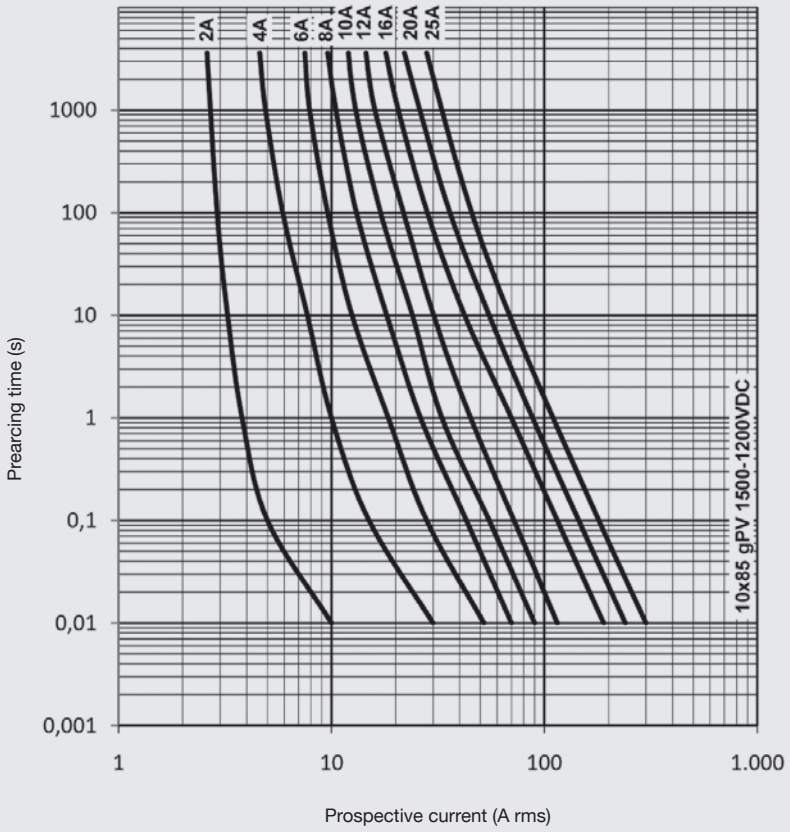
TECHNICAL

gPV

FUSE-LINKS FOR PHOTOVOLTAIC APPLICATIONS

t-I CHARACTERISTICS & POWER DISSIPATION

10x85



	RATED CURRENT (A)	REFERENCE	POWER DISSIPATION (W @ 0,7 In)	POWER DISSIPATION (W @ In)	PREARCING I^2t (A^2s)	OPERATING I^2t (A^2s)
1500V DC	2	**492202**	1,28	3,42	0,8	1,1
	4	**492205**	1,16	2,91	13	17
	6	**492210**	1,10	2,65	65	84
	8	**492215**	1,16	2,79	175	225
	10	**492220**	1,81	4,38	209	269
	12	**492225**	1,83	4,43	400	515
1200V DC	16	**492230**	1,75	4,13	136	269
	20	**492235**	2,13	5,14	242	478
	25	**492240**	2,28	5,48	545	1075

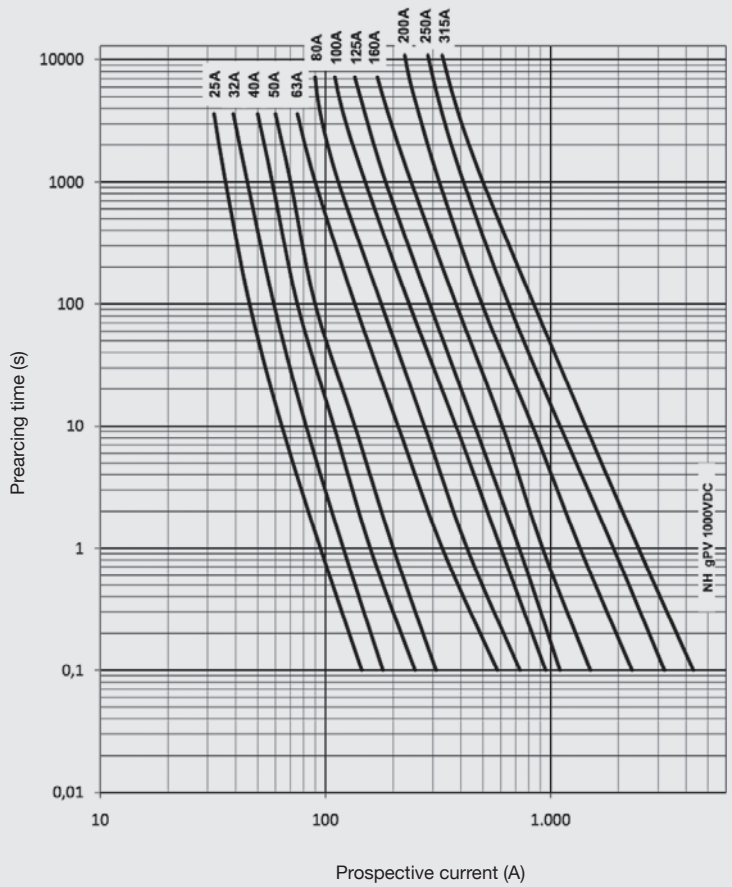
TECHNICAL

gPV FUSE-LINKS FOR PHOTOVOLTAIC APPLICATIONS

t-I CHARACTERISTICS & POWER DISSIPATION

NH1

NH3



	RATED CURRENT (A)	REFERENCE 1000V DC	POWER DISSIPATION (W @ 0,7 In) 1000V DC	POWER DISSIPATION (W @ In) 1000V DC	PREARCING I^2t (A^2s) 1000V DC	OPERATING I^2t (A^2s) 1000V DC
NH1	25	**373210**	5,2	12,5	62	94
	32	**373215**	6,3	15,5	122	184
	40	**373225**	6,7	16,6	302	454
	50	**373230**	7,5	18	562	844
	63	**373235**	8,2	20	1210	1815
	80	**373240**	10	27	2250	3375
	100	**373245**	11	28	4000	6000
	125	**373250**	12,5	32	6500	9700
	160	**373255**	13,5	34,0	9200	16600
NH3	200	**373425**	19,5	48,0	21700	31700
	250	**373435**	20,5	51,5	41000	60000
	315	**373445**	26,2	66,0	76000	111500

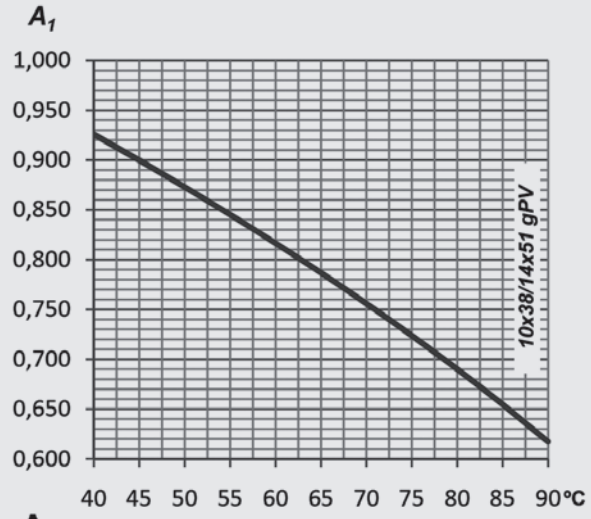
TECHNICAL

gPV FUSE-LINKS FOR PHOTOVOLTAIC APPLICATIONS
AMBIENT TEMPERATURE DERATING FACTOR

10x38
14x51

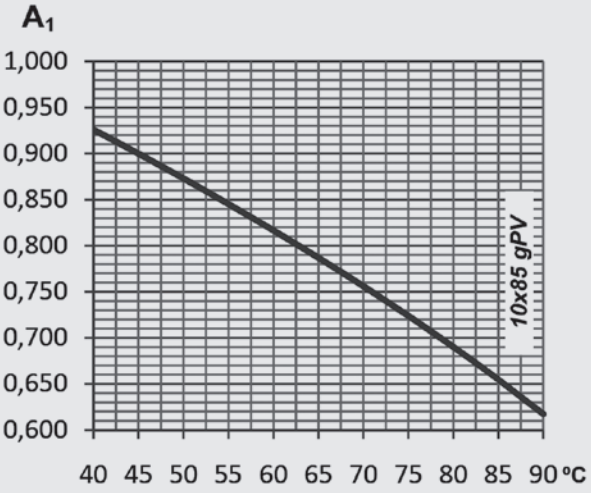
10x85

10x38
14x51



t_a (°C)	A_1
40	0,92
45	0,90
50	0,87
55	0,85
60	0,82
65	0,79
70	0,76
75	0,72
80	0,69

10x85

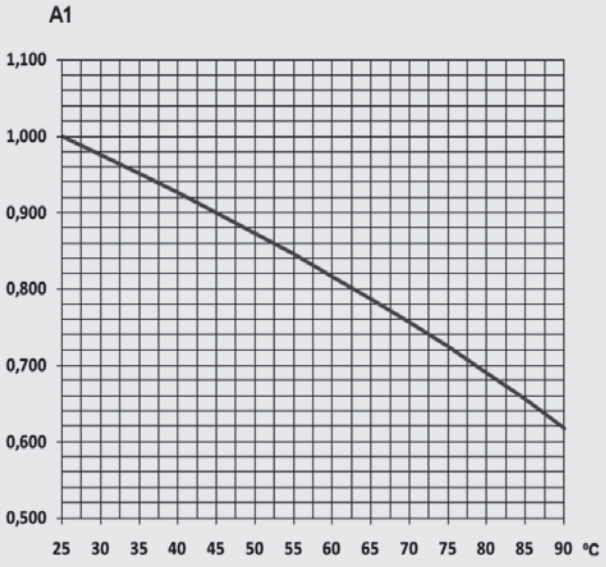


t_a (°C)	A_1
40	0,92
45	0,90
50	0,87
55	0,85
60	0,82
65	0,79
70	0,76
75	0,72
80	0,69

TECHNICAL

gPV FUSE-LINKS FOR PHOTOVOLTAIC APPLICATIONS
AMBIENT TEMPERATURE DERATING FACTOR

NH1



t_a (°C)	A_1
40	0,92
45	0,90
50	0,87
55	0,85
60	0,82
65	0,79
70	0,76
75	0,72
80	0,69

Electric

THE PROTECTION FORMULA

ELECTRONIC

CYLINDRICAL

PHOTOVOLTAIC

RAPIDPLUS

NH

SPECIAL FUSES

DOMESTIC

D & DO

TRANSFORMERS

eXperts in

PROTECTION

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