Green solutions for electrical protection.

dfelectric.es | passion for electrical protection

company

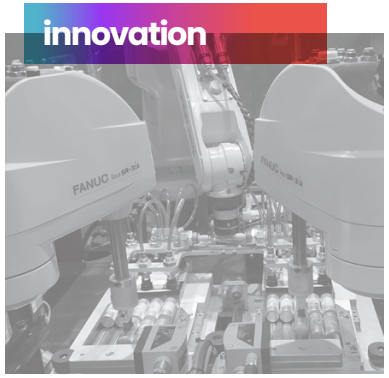
factory

photovoltaic

cylindrical

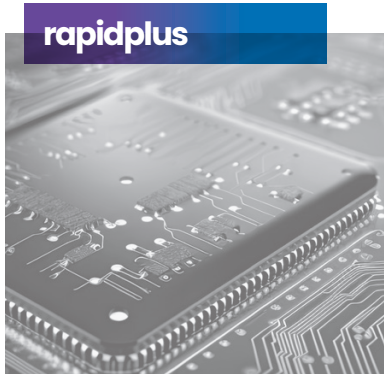
BESS battery

innovation



quality

rapidplus



NH knife-blade

medium voltage

world presence

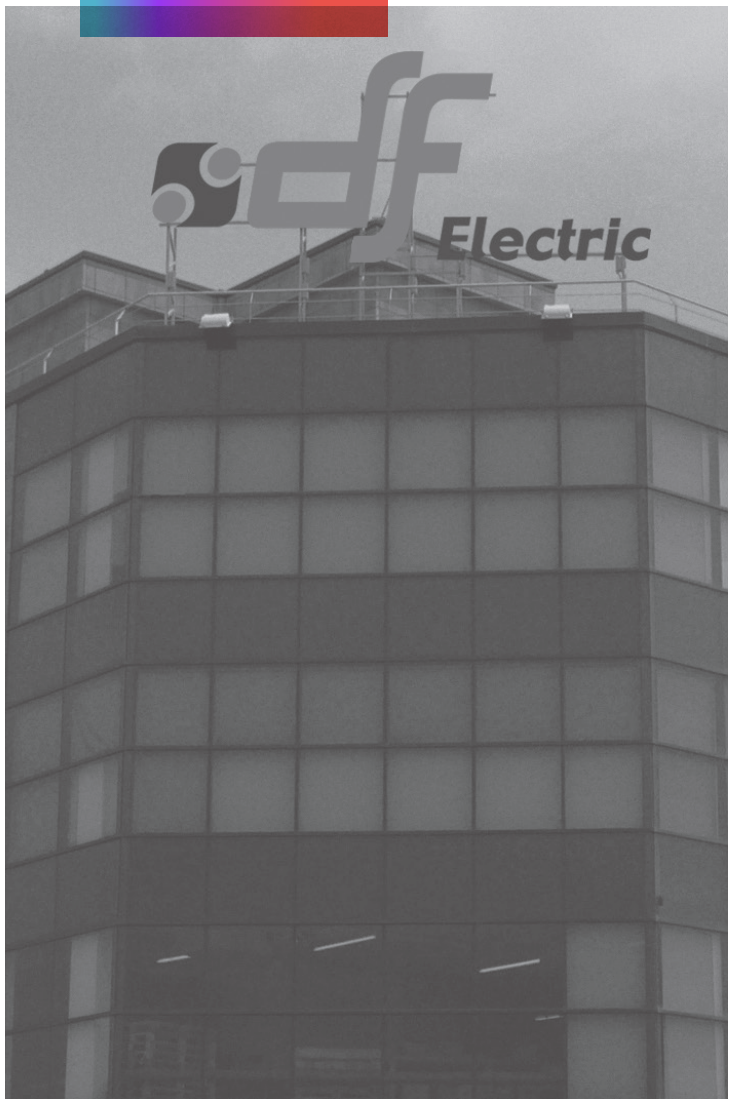
environment

multimeter

transformers

company

A large modern company that efficiently and effectively manages resources.



1987
DF ELECTRIC
was founded in Barcelona

120
PERSONS

Our vision for the future is to attain a leadership position in the manufacturing and commercialisation of our products, strengthening our global presence.

factory

The production process is totally integrated into our facilities.

5.000
REFERENCES
catalogue of products

60
MILLIONS
annual manufacturing units

Our manufacturing processes are highly automated, fruit of the internally developed technological level, and specifically applied to each production line.

From the manufacturing of each product until its final assembly we try to obtain maximum efficiency applying ongoing improvement and respecting the most demanding standards.

innovation

Permanent innovation investment allows us to always offer our clients products with high standards of quality and functionality.

5%
INVOICING
r&d and innovation investment

The **R&D&I** department consists of a great professional team and the most advanced technologies and tools to efficiently comply with our mission. Highlighting the most powerful and versatile design and simulation software that exists.

The **laboratory** equipment allows performing a large amount of electrical and mechanical tests during the development of new products and periodical controls on those already in production.

quality

Our quality system **ISO 9001 & ISO 14001 certificates**, are the tools we use for development of our policy integrated into all organisational levels.

100% VERIFICATION

manufactured products

Our company applies an integrated quality, environmental and prevention policy based on the satisfaction of our clients and suppliers as the fundamental objective.

Compliance with legal and regulatory requirements from the design and innovation phase.

Excellence of our products.

Correct development of our processes.

Commitment with ongoing improvement in the entire organisation.

Thinking based on risk analysis.

world presence

Our international presence positions us a reference in electrical protection.

NORTH AMERICA
Canada
Mexico
USA

SOUTH AMERICA
Argentina
Colombia
Costa Rica
El Salvador
Guatemala
Nicaragua
Peru
Venezuela

EMEA
EUROPE/MIDDLE EAST/AFRICA
Algeria
Belgium
Bulgaria
Cameroon
Croatia
Czech Republic
Denmark
Egypt
Finland
France
Georgia
Germany
Greece
Hungary
Iraq
Ireland
Israel
Italy
Ivory Coast
Jordan
Kuwait
Lebanon
Lithuania
Malta
Morocco
Netherlands
Norway
Oman
Poland
Portugal
Qatar
Romania
Russia
Saudi Arabia
Senegal
Slovenia
South Africa
Spain
Sweden
Switzerland
Tunisia
Türkiye
United Arab Emirates
United Kingdom
Ukraine

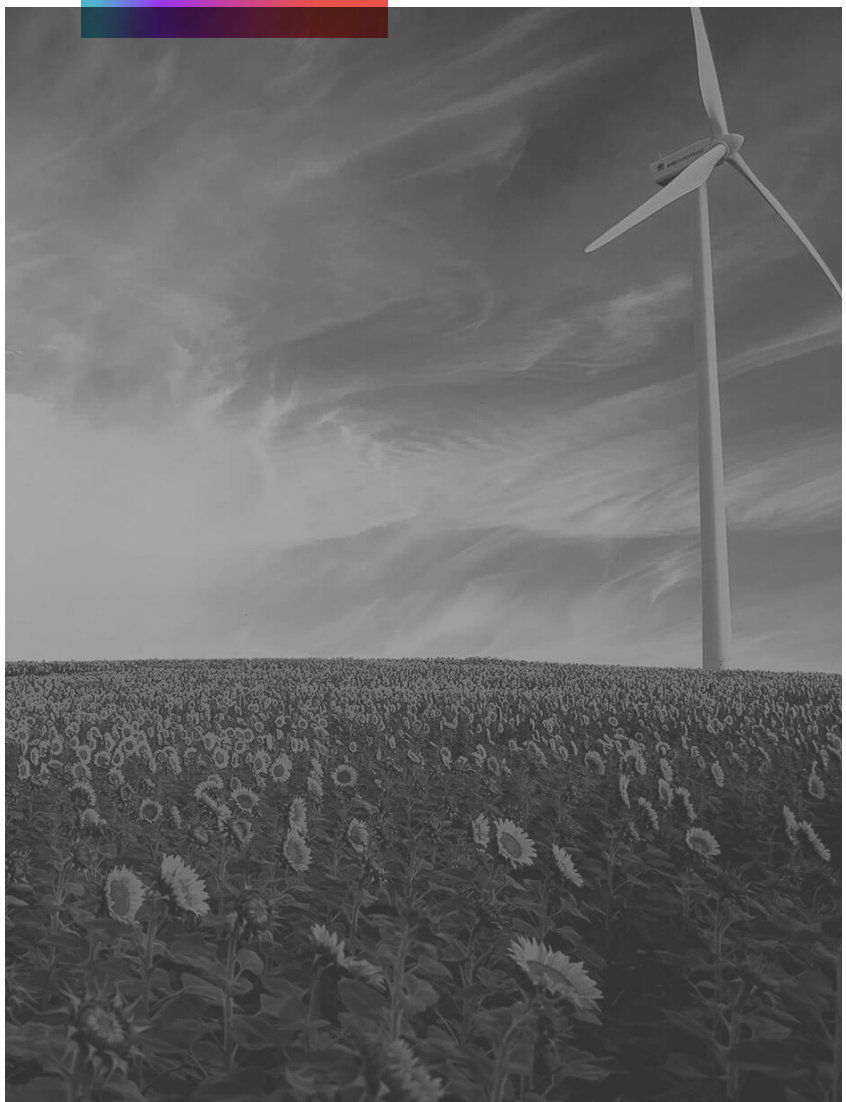
ASIA
China
Hong Kong
India
Japan
Korea
Malaysia
Pakistan
Singapore
Taiwan
Thailand
Vietnam

OCEANIA
Australia

68
COUNTRIES
world presence

80%
EXPORT
total annual sales

environment



We are fully committed to the care and conservation of the environment.

Our environmental policy is essentially based on fostering respect for the environment.

Commitment for ongoing improvement in environmental practices and prevention of contamination.

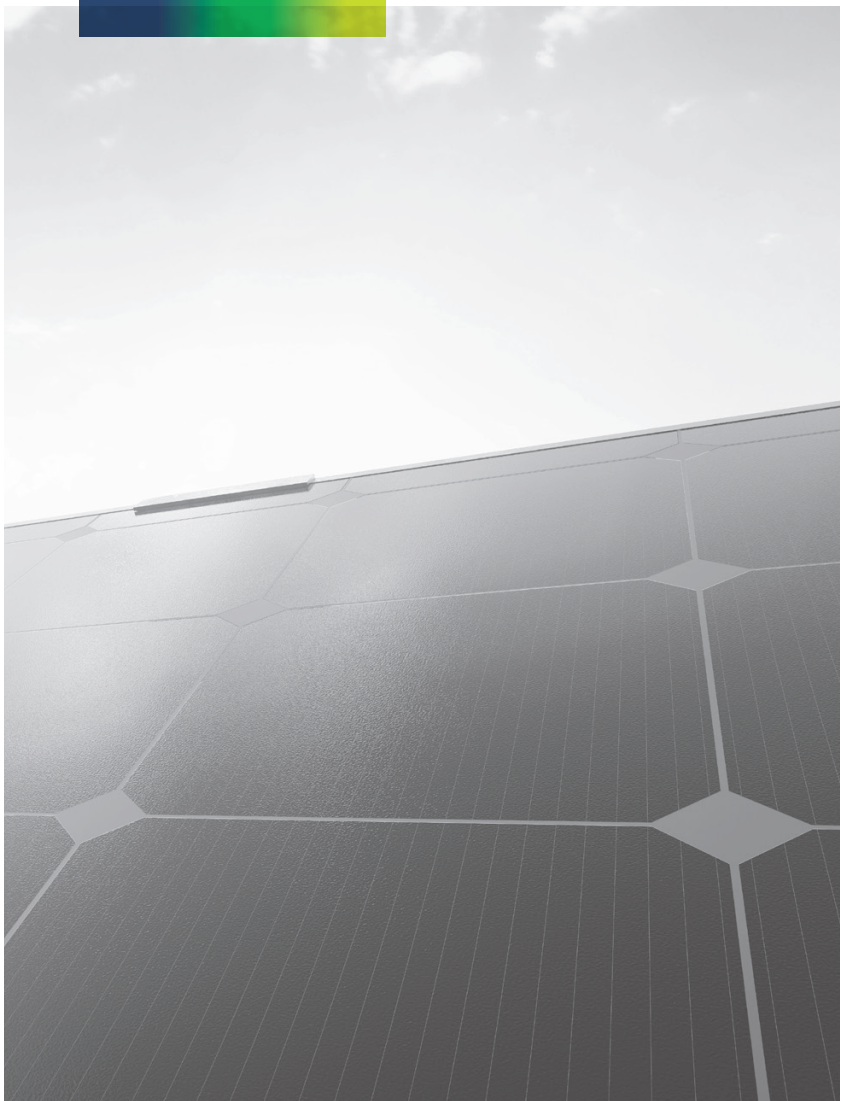
Compliance with legal and regulatory requirements from the design and innovation phase.

Reduction of environmental impacts.

RoHS compliant DIRECTIVE 2002/95/EC

photovoltaic

We develope specific fuse links and fuse holders to offer a compact, safety and economic protection solution in photovoltaic installations.



HORUS® PHOTOVOLTAIC PROTECTION

Photovoltaic, or PV for short, is a technology that converts light directly into electricity. Photovoltaic is also the field of study relating to this technology and there are many research institutes devoted to work on photovoltaic.

Due to the growing need for solar energy, the manufacture of solar cells and solar photovoltaic array has expanded dramatically in recent years, making it the world's fastest-growing energy technology.

photovoltaic

gPV Cylindrical fuse links

Cylindrical fuse links
for photovoltaic
applications.

HORUS®
PHOTOVOLTAIC
PROTECTION

gPV 10×38 and 14×51 cylindrical fuse links have been developed to offer a compact, safety and economic protection of photovoltaic modules (array protection) with voltages up to 1.000/1.100V DC.

gPV 10×85, 10/14×85 and 22×65 cylindrical fuse links offer a compact, safety and economic protection of photovoltaic modules (array protection) with voltages up to 1.200/1.500V DC.

rated voltage	**standards**
1000V DC 1100V DC 1200V DC 1500V DC	IEC/EN 60269-1 IEC/EN 60269-6 UL248-19
rated current	
1A .. 60A	

photovoltaic

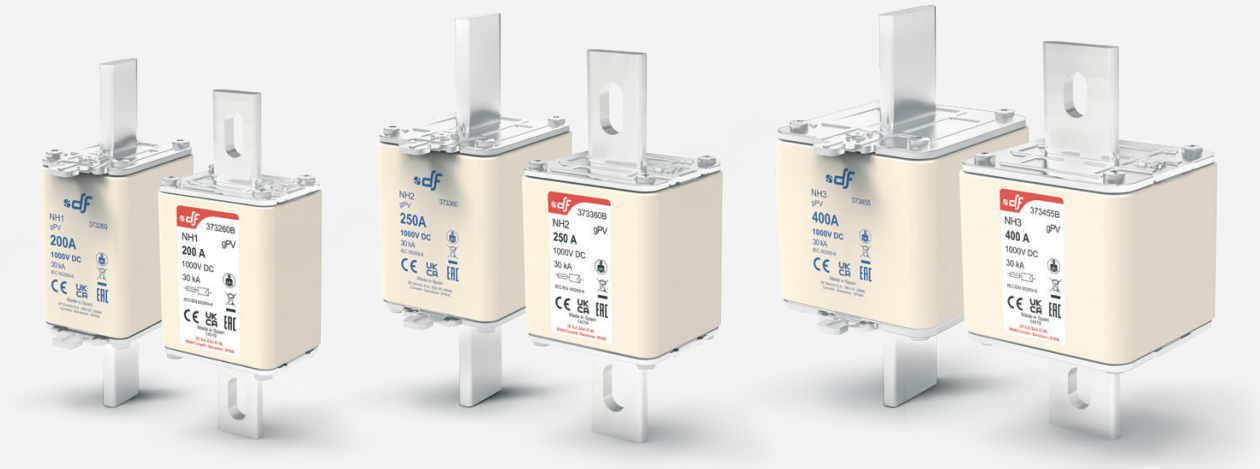
1000V DC gPV NH fuse links

1000V DC NH fuse links for photovoltaic applications.

1000V DC gPV NH fuse links for photovoltaic installations have been developed to offer a safety protection solution in sub-array, array or inverter DC input of photovoltaic installations.

rated voltage	standards
1000V DC	IEC/EN 60269-1 IEC/EN 60269-6
rated current	UL248-1 UL248-19
25A .. 400A	

HORUS®
PHOTOVOLTAIC
PROTECTION



NH1 NH2 NH3

photovoltaic

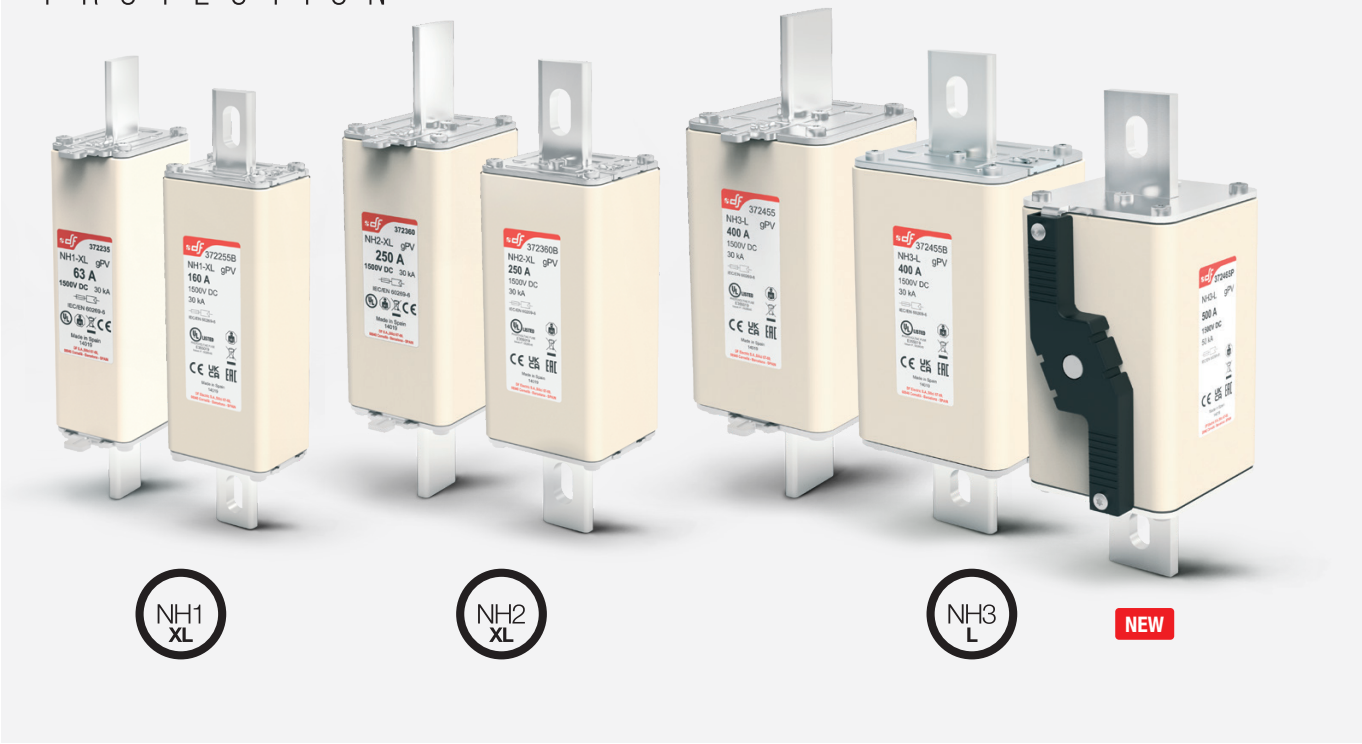
1500V DC XL gPV NH fuse links

1500V DC XL
NH fuse links for
photovoltaic
applications.

1500V DC XL gPV NH fuse links for photovoltaic installations have been developed to offer a safety protection solution in sub-array, array or at the DC input of inverters.

rated voltage	standards
1500V DC	IEC/EN 60269-1 IEC/EN 60269-6
rated current	UL248-1 UL248-19
40A _ 500A	

HORUS® PHOTOVOLTAIC PROTECTION



photovoltaic

800V AC gG/gL NH fuse links

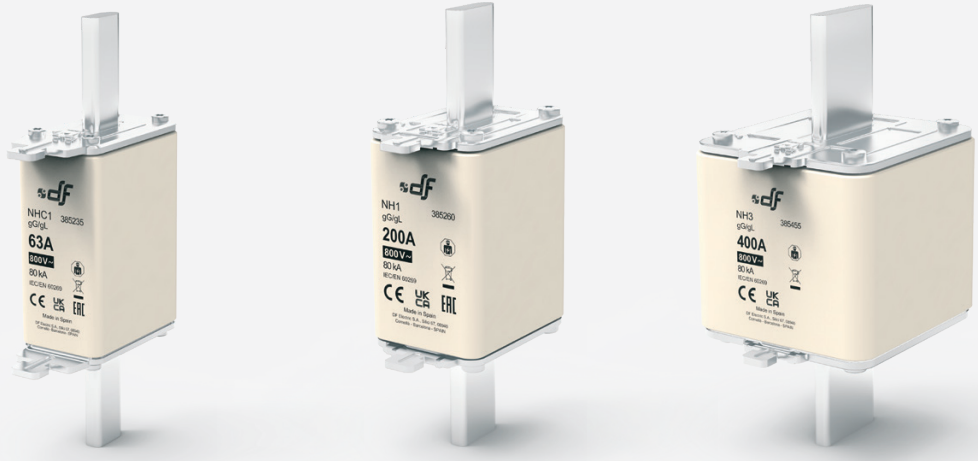
800V AC
NH fuse links for output side of new generation of photovoltaic inverters.

800V AC gPV NH fuse links with high breaking capacity are intended for protection of the output side of new generation of photovoltaic inverters.

They are also adequate for the protection of 690V AC capacitor banks.

rated voltage	**standards**
800V AC	IEC/EN 60269-1 IEC/EN 60269-2
rated current	
25A .. 400A	

HORUS® PHOTOVOLTAIC PROTECTION



NHC1 NH1 NH3

photovoltaic

1500V DC PMLe Cylindrical fuse holders

Fuse holders for gPV cylindrical fuse links sizes 10×85 and 10/14×85.

Modern compact design. Ventilation zones optimized for a better heat dissipation. Manufactured with a high quality materials. Silver plated copper contacts. Plastic materials with high temperature resistance and self-extinguishable.

rated voltage	standards
1000V DC 1500V DC	IEC/EN 60269-1 IEC/EN 60269-2 UL4248-1 UL4248-19 UL486E
rated current	
32A	

HORUS® PHOTOVOLTAIC PROTECTION

PML e

photovoltaic

PMX PV Cylindrical fuse holders

Cylindrical fuse holders for photovoltaic applications.

PMX PV modular fuse holders 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.

rated voltage	standards
1000V DC 1100V DC 1500V DC	IEC/EN 60269-1 IEC/EN 60269-2 UL4248-1 UL4248-19 UL486E CSA C22.2 Nº 4248-1 CSA 22.2 Nº 65
rated current	
32A 50A 100A	

HORUS® PHOTOVOLTAIC PROTECTION

10x38

14x51

22x65

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photovoltaic

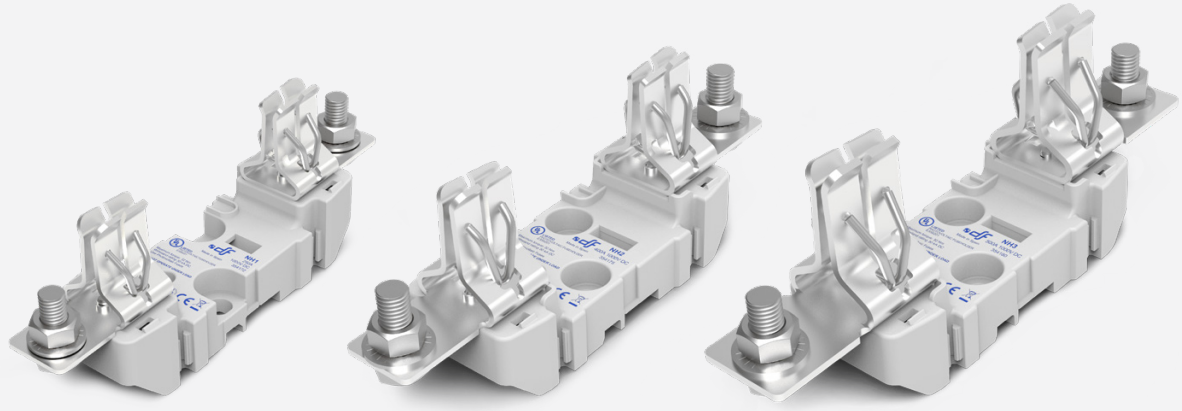
1000V DC NH ST fuse bases

Fuse bases for
1000V DC
NH fuse links
in photovoltaic
applications.

Manufactured with a high quality materials. Silver plated copper contacts. Plastic materials with high temperature resistance and self-extinguishable.

rated voltage	standards
1000V DC	IEC/EN 60269-1 IEC/EN 60269-2 UL4248-1 UL4248-19
rated current	
250A 400A 500A	

HORUS® PHOTOVOLTAIC PROTECTION



NH1 NH2 NH3

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photovoltaic

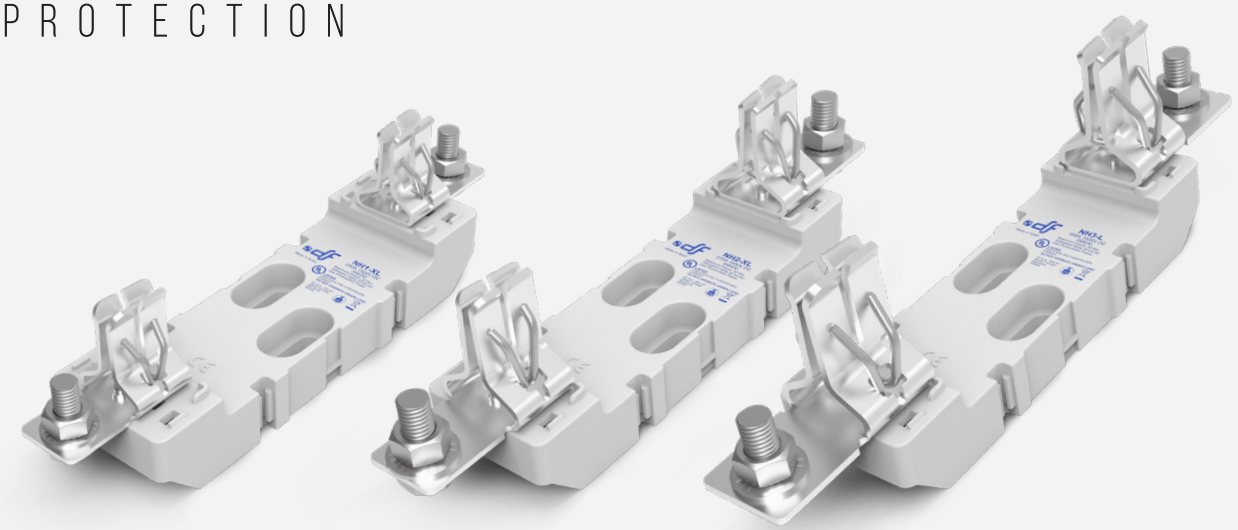
1500V DC NH ST fuse bases

Fuse bases for 1500V DC XL NH fuse links in photovoltaic applications.

Manufactured with a high quality materials. Silver plated copper contacts. Plastic materials with high temperature resistance and self-extinguishable.

rated voltage	standards
1500V DC	IEC/EN 60269-1 IEC/EN 60269-2 IEC/EN 60269-6 UL4248-1 UL4248-19
rated current	
200A 315A 500A	

HORUS® PHOTOVOLTAIC PROTECTION



NH1 XL | NH2 XL | NH3 L

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photovoltaic

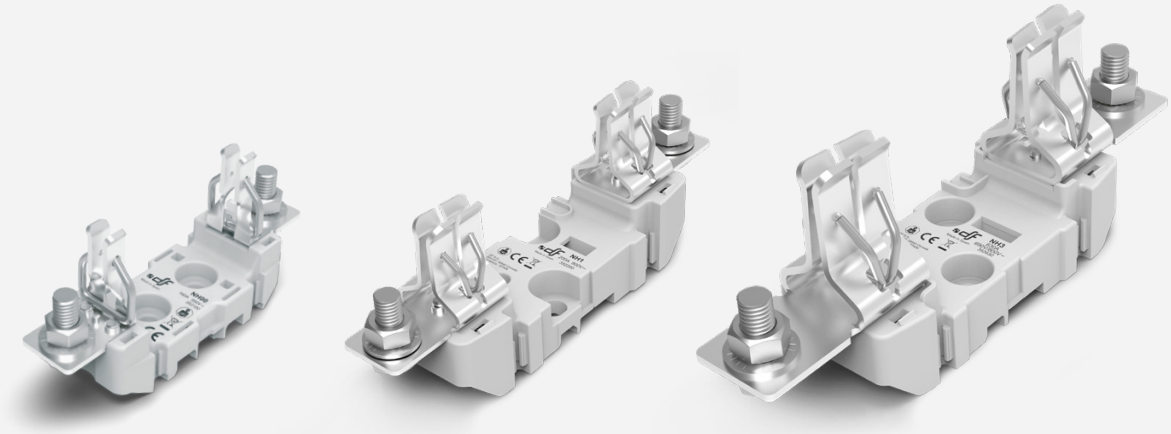
800V AC NH ST bases

Fuse bases
for 800V AC
NH fuse links
in photovoltaic
applications.

Manufactured with a high quality materials. Silver plated copper contacts. Plastic materials with high temperature resistance and self-extinguishable.

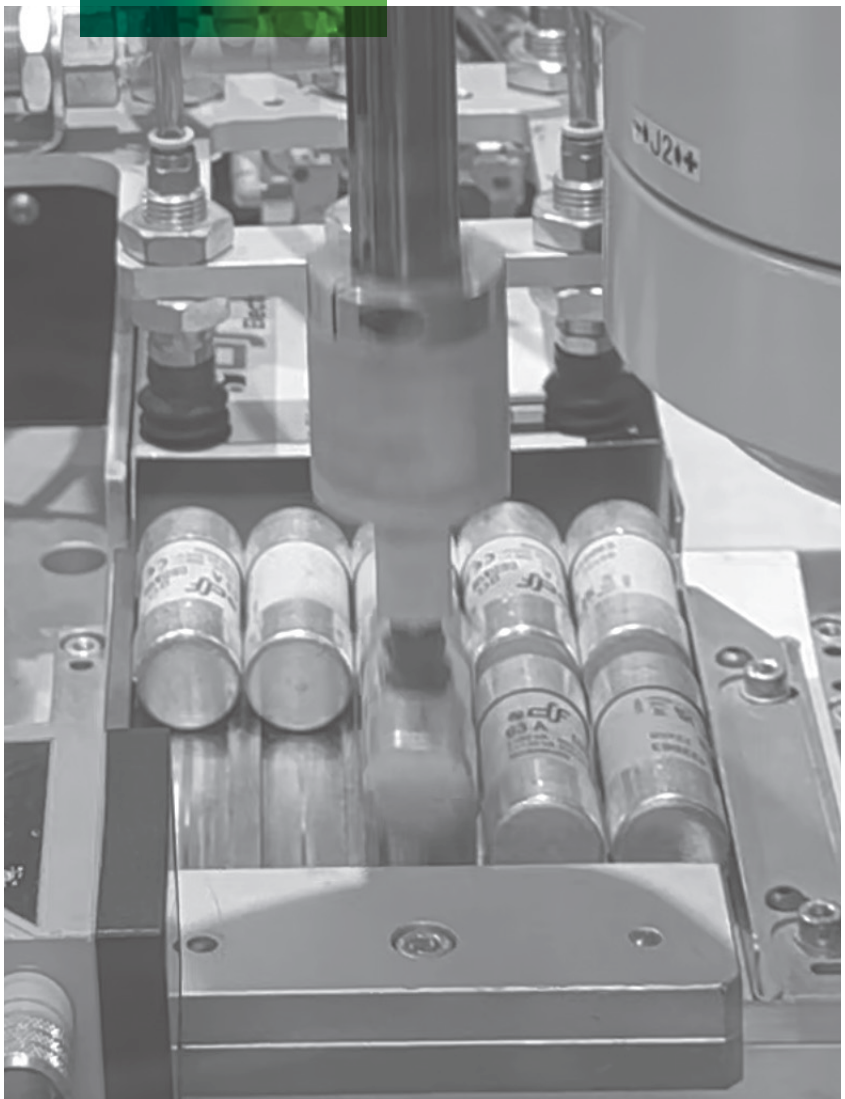
rated voltage	standards
800V AC	IEC/EN 60269-1 IEC/EN 60269-2 DIN 43620
rated current	
160A 200A 630A	

HORUS®
PHOTOVOLTAIC
PROTECTION



NH00 NH1 NH3

cylindrical



Cylindrical fuse cartridges class gG and aM for general use protection against both overloads and short-circuits, indicated for line or equipment protection.

Modular separable fuse holder bases for cylindrical fuses in sizes 8x32, 10x38, 14x51, and 22x58 according to IEC 60269 standard. Optimised ventilation areas for better heat dissipation.

Manufactured in high performance polymer.

cylindrical

gG Cylindrical fuse links

Cylindrical industrial gG class fuse links for use as general protection against overloads and short circuits, intended as protection for cables, power lines and equipment.

Available in standard version and with visual fusing indicator.

For sizes 14×51 and 22×58 also available in striker version intended for use in fuseholders with microswitch.

rated voltage	standards
400V AC 500V AC 690V DC	IEC/EN 60269-1 IEC/EN 60269-2
rated current	
0,5A .. 125A	

cylindrical

aM fuse links

Cylindrical industrial aM class fuse links are intended for short-circuit protection in motors, transformers and other loads with high inrush currents.

Provide excellent protection of switchgear (contactors, thermal switch, etc) due to good current limiting capability and low I^2t values.

These fuse links must be associated with an overload device protection as a thermal switch or equivalent.

Available in standard version and with visual fusing indicator.

rated voltage	**standards**
400V AC 500V AC 690V DC	IEC/EN 60269-1 IEC/EN 60269-2
rated current	
0,16A .. 125A	

cylindrical

PME fuse holders

NEW

Fuse holders for gPV cylindrical fuse links sizes 10×38.

Fuse holder for cylindrical fuse link size 10x38 according IEC/EN 60269 standard.

Modern compact design. Ventilation zones optimized for a better heat dissipation. Manufactured with a high quality materials. Silver plated copper contacts. Plastic materials with high temperature resistance and self-extinguishable.

rated voltage	standards
690V AC 750V DC	IEC/EN 60269-1 IEC/EN 60269-2
rated current	
32A	

PME

cylindrical

PMX fuse holders

Industrial modular fuse holders for cylindrical fuse links.

Compact design, with reduced dimensions. Ventilation zones optimized for a better heat dissipation. Manufactured with a high quality materials.

rated voltage	standards
400V DC/AC 690V DC/AC 750V DC/AC 1000V DC/AC	IEC/EN 60269-1 IEC/EN 60269-2
rated current	
25A 32A 50A 100A	

cylindrical

PMC Compact fuse holders

Compact fuse holders for industrial cylindrical fuse links.

Very low dimensions. For mounting on DIN/ EN rail. Single phase models or single phase + neutral in only one module. Multi-pole units can be made with connection accessories.

Ventilation zones optimized for a better heat dissipation.

Manufactured with a high quality materials.

rated voltage	**standards**
400V AC 500V AC	IEC/EN 60269-1 IEC/EN 60269-2
rated current	
25A 32A	

cylindrical

PMX CC fuse holders

Modular fuse holders for cylindrical CC class fuse links.

CC

Modular fuse holder for cylindrical fuse link size CLASS CC according UL4248-4 standard.

Compact design, with reduced dimensions. Ventilation zones optimized for a better heat dissipation.

Manufactured with a high quality materials.

rated voltage	**standards**
600V AC/DC	UL4248-1 UL4248-4 UL486E CSA C22.2 Nº 4248-1 CSA 22.2 Nº 65
rated current	
30A	

BESS battery storage

BESS Battery energy storage systems protection fuse links.

These fuse links are designed and manufactured with the same techniques that semiconductor fuse links, which makes them very fast of operation and gives a good performance under continuous charge/discharge cycles.

They are optimized to have reduced power dissipations that allow the utilization of a wide range of fuse bases, disconnectors and fuse switch disconnectors.

BESS battery storage

gBat Cylindrical fuse links

NEW

gBat Cylindrical fuse links are specially designed to protect BESS battery energy storage systems according to the Standard IEC60269-7.

14x51 22x58

They are capable to clearing all types of overcurrents, overloads and short-circuits, thus the fuse links protect the batteries as well as cables and all switchgear of installation.

They are available in standard version as well as striker versions to be used in fuse bases with microswitch.

rated voltage	standards
600V DC	IEC/EN 60269-1 IEC 60269-7
rated current	
2A .. 80A	

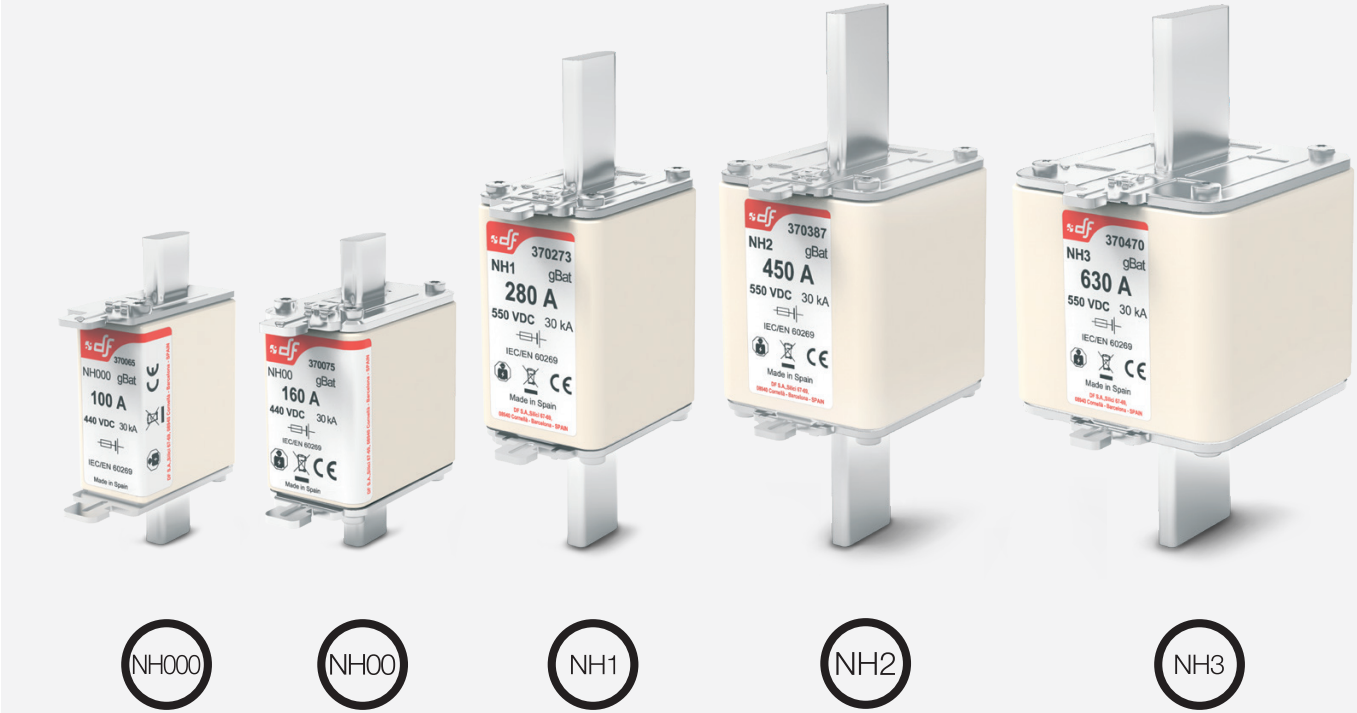
BESS battery storage

440V/550V DC
gBat NH fuse links

440V/550V DC
NH fuse links for
BESS battery energy
storage systems protection.

440V/550V DC gBat NH fuse links are specially designed to protect battery systems according to the Standard IEC60269-7.

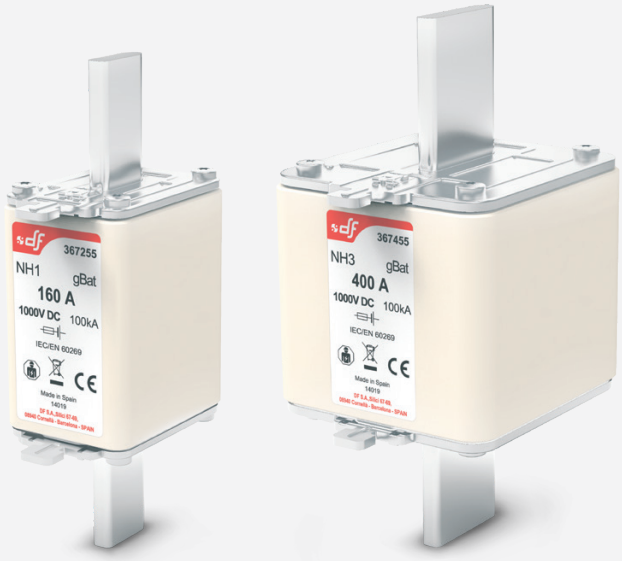
rated voltage	standards
440V DC 550V DC	IEC/EN 60269-1 IEC 60269-7
rated current	
20A _ 630A	



BESS battery storage

1000V DC gBat NH fuse links

1000V DC
NH fuse links for
BESS battery energy
storage systems protection.



1000V DC gBat NH fuse links are specially designed to protect battery systems according to the Standard IEC60269-7.

rated voltage	standards
1000V DC	IEC/EN 60269-1 IEC 60269-7
rated current	
40A _ 400A	

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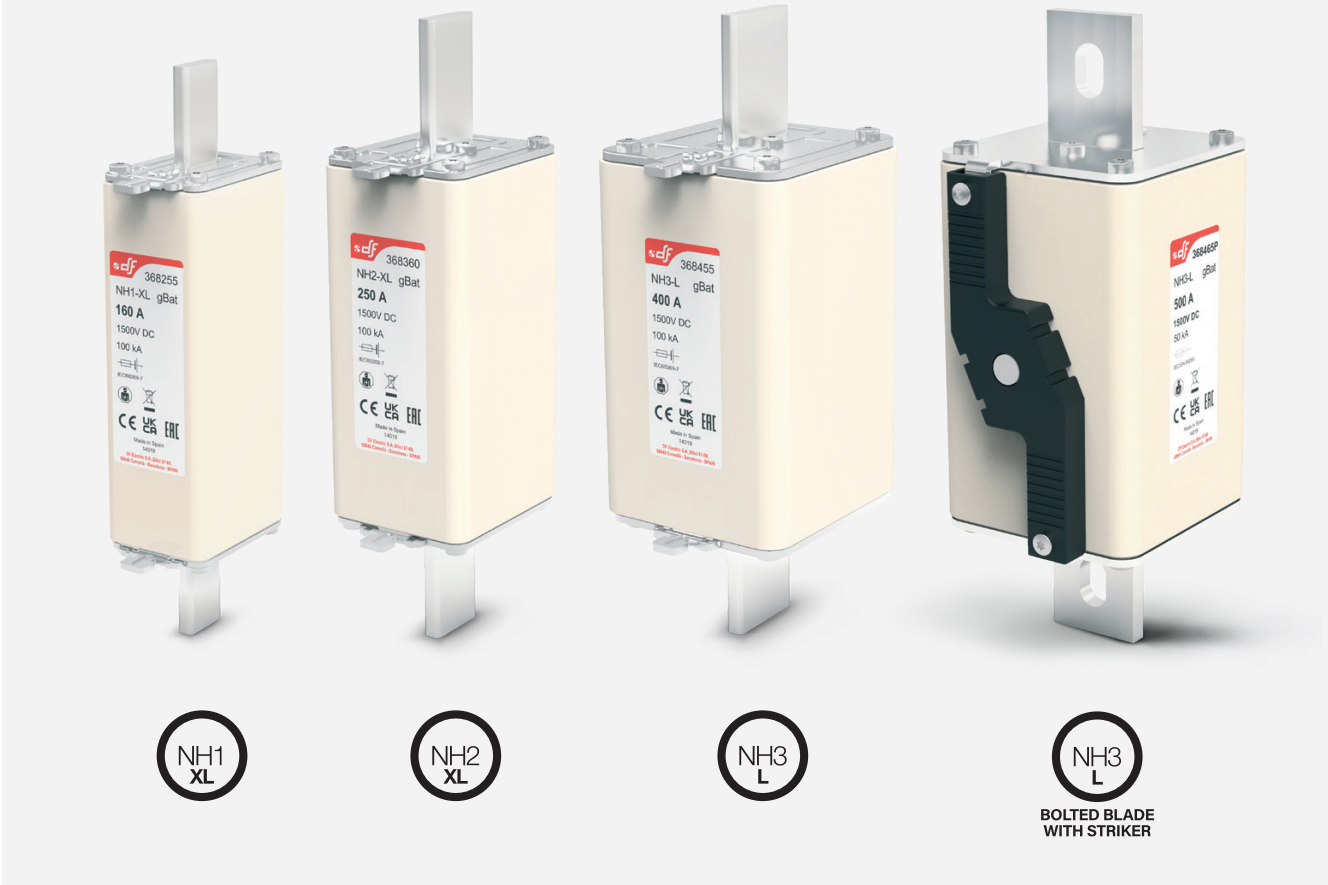
BESS battery storage

1500V DC gBat NH fuse links

1500V DC
NH fuse links for
BESS battery energy
storage systems protection.

1500V DC gBat NH fuse links are specially designed to protect battery systems according to the Standard IEC60269-7.

rated voltage	standards
1500V DC	IEC/EN 60269-1
rated current	IEC 60269-7
63A .. 500A	



BESS battery storage

1500V DC aBat NH fuse links

1500V DC
NH fuse links for
BESS battery energy
storage systems protection.

Provide excellent protection against short-circuits for the batteries as well as other devices of the installation such as contactors or switches.

These fuse links have a striker that can be used as a visual indication or can be equipped with a **microswitch mounted on the fuse link**.

rated voltage	**standards**
1500V DC	IEC/EN 60269-1 IEC 60269-7 UL248-1 UL248-21
rated current	
450A .. 1250A	

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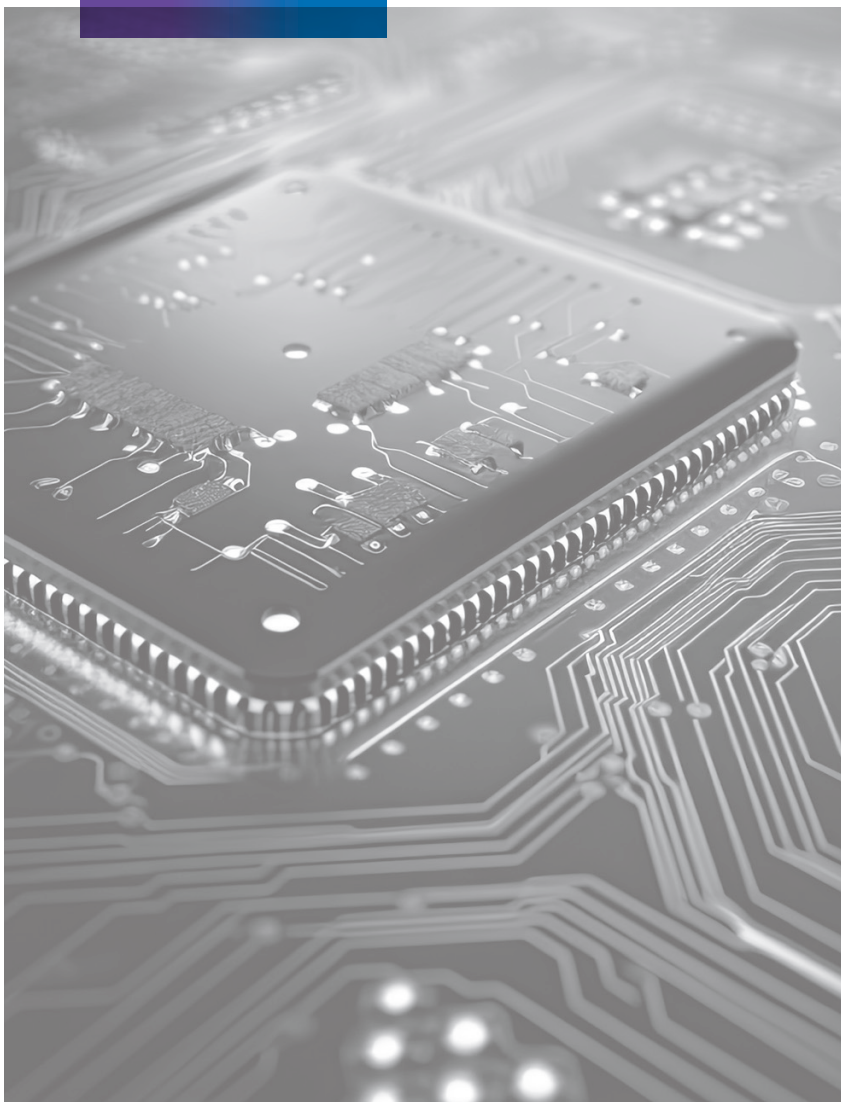
semiconductors



Rapidplus®

Cylindrical fuse links for semiconductors.

Rapidplus® cylindrical fuse links are capable to clearing all types of overcurrents, overloads as well as short-circuits, thus the fuse links protect semiconductors as well as cables and all switchgear of installation.

They are optimized to have reduced power dissipations that allow the utilization of a wide range of fuse bases, disconnectors and fuse-switch diconnectors.

semiconductors

gR Cylindrical fuse links

gR Cylindrical fuse links
for semiconductors.

Rapidplus®

Rapidplus® gR Cylindrical fuse links are capable to clearing all types of overcurrents, overloads as well as short-circuits, thus the fuse links protect semiconductors as well as cables and all switchgear of installation.

rated voltage	standards
690V AC	IEC/EN 60269-1 IEC/EN 60269-4 UL248-1 UL248-13
rated current	
1A .. 100A	

semiconductors

aR Cylindrical fuse links

aR Cylindrical fuse links
for semiconductors.

Rapidplus®

10x38 14x51 22x58

Rapidplus® aR Cylindrical fuse links are intended to clearing short-circuits and have been designed and manufactured to have very low I^2t values as well as reduced arc voltages that guarantee an optimum protection of semiconductors.

rated voltage	**standards**
690V AC	IEC/EN 60269-1 IEC/EN 60269-4 UL248-1 UL248-13
rated current	
1A .. 100A	

semiconductors

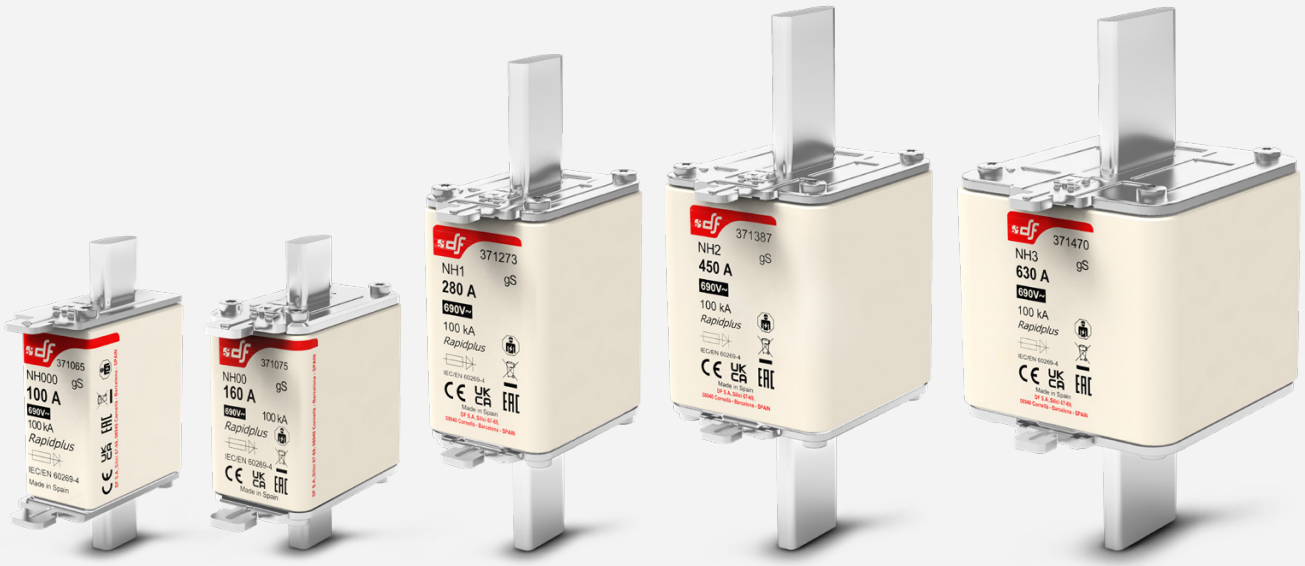
gS NH fuse links

gS 690V NH
fuse links for
semiconductors.

Rapidplus® gS NH fuse links are capable to clearing all types of overcurrents, overloads as well as short-circuits, thus the fuse links protect semiconductors as well as cables and all switchgear of installation.

rated voltage	standards
690V AC	IEC/EN 60269-1 IEC/EN 60269-4
rated current	
20A .. 630A	

Rapidplus®



NH000 NH00 NH1 NH2 NH3

semiconductors

gS NH fuse links

gS 800V NH
fuse links for
semiconductors.

Rapidplus® gS NH fuse links are capable to clearing all types of overcurrents, overloads as well as short-circuits, thus the fuse links protect semiconductors as well as cables and all switchgear of installation.

rated voltage	standards
800V AC	IEC/EN 60269-1 IEC/EN 60269-4
rated current	
25A .. 100A	

Rapidplus®

NH00

NH1

NH3

semiconductors

aR NH fuse links

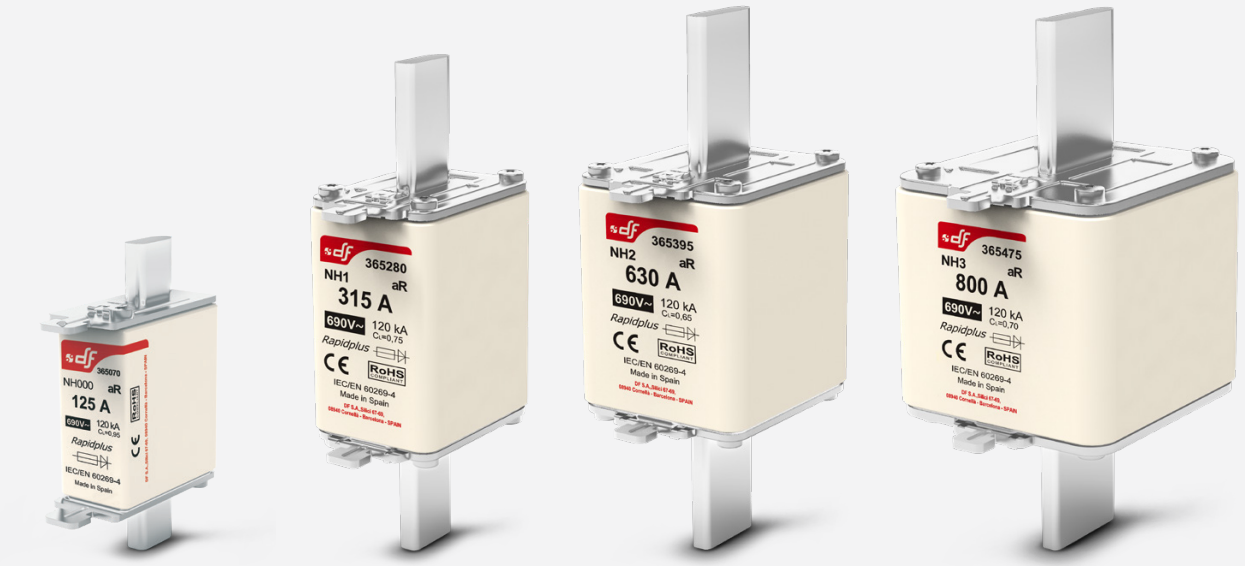
aR 690V NH
fuse links for
semiconductors.

Rapidplus® aR NH fuse links have a very low I^2t values thanks to the special melting elements design, manufactured with pure silver.

The sand is solidified in order to have a good arcing control, high breaking capacity and excellent capability for cyclic loads.

rated voltage 690V AC **rated current** 16A _ 1000A	**standards** IEC/EN 60269-1 IEC/EN 60269-4

Rapidplus®



NH000 NH1 NH2 NH3

semiconductors

SQB1 Square body aR fuse links

NEW

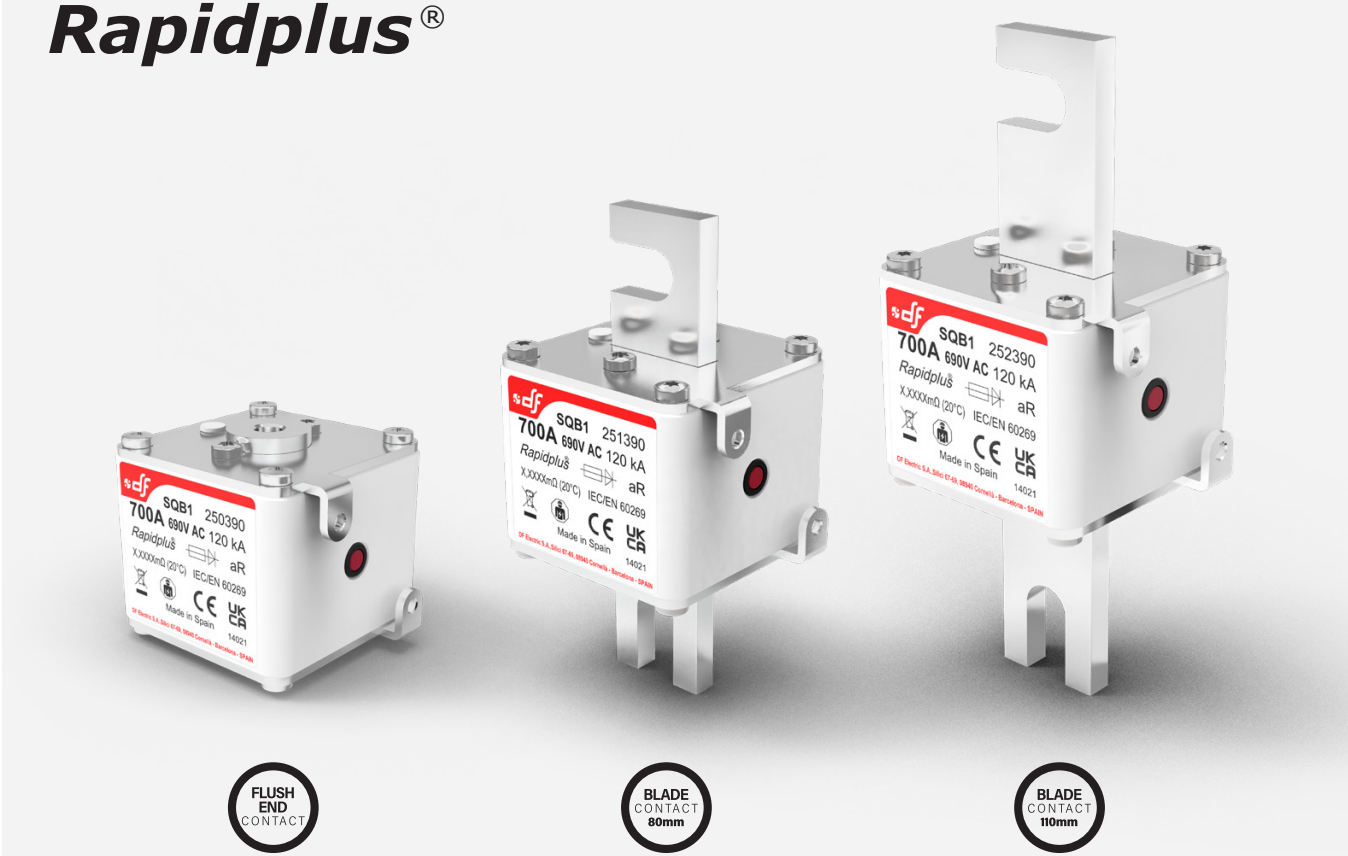
Fuse links specially designed for protection of power semiconductor devices.

Thanks to the design of their melting elements, the materials employed and their construction with solidified sand, these fuses provide excellent characteristics:

- Ultra-fast acting.
- Very good current limiting.
- Very low I^2t values.
- High breaking capacity.
- Excellent cycling capability.

rated voltage	standards
690V AC	IEC/EN 60269-1 IEC/EN 60269-4 UL248-1 UL248-13
rated current	
80A .. 800A	

Rapidplus®



FLUSH END CONTACT

BLADE CONTACT 80mm

BLADE CONTACT 110mm

semiconductors

SQB2 Square body aR fuse links

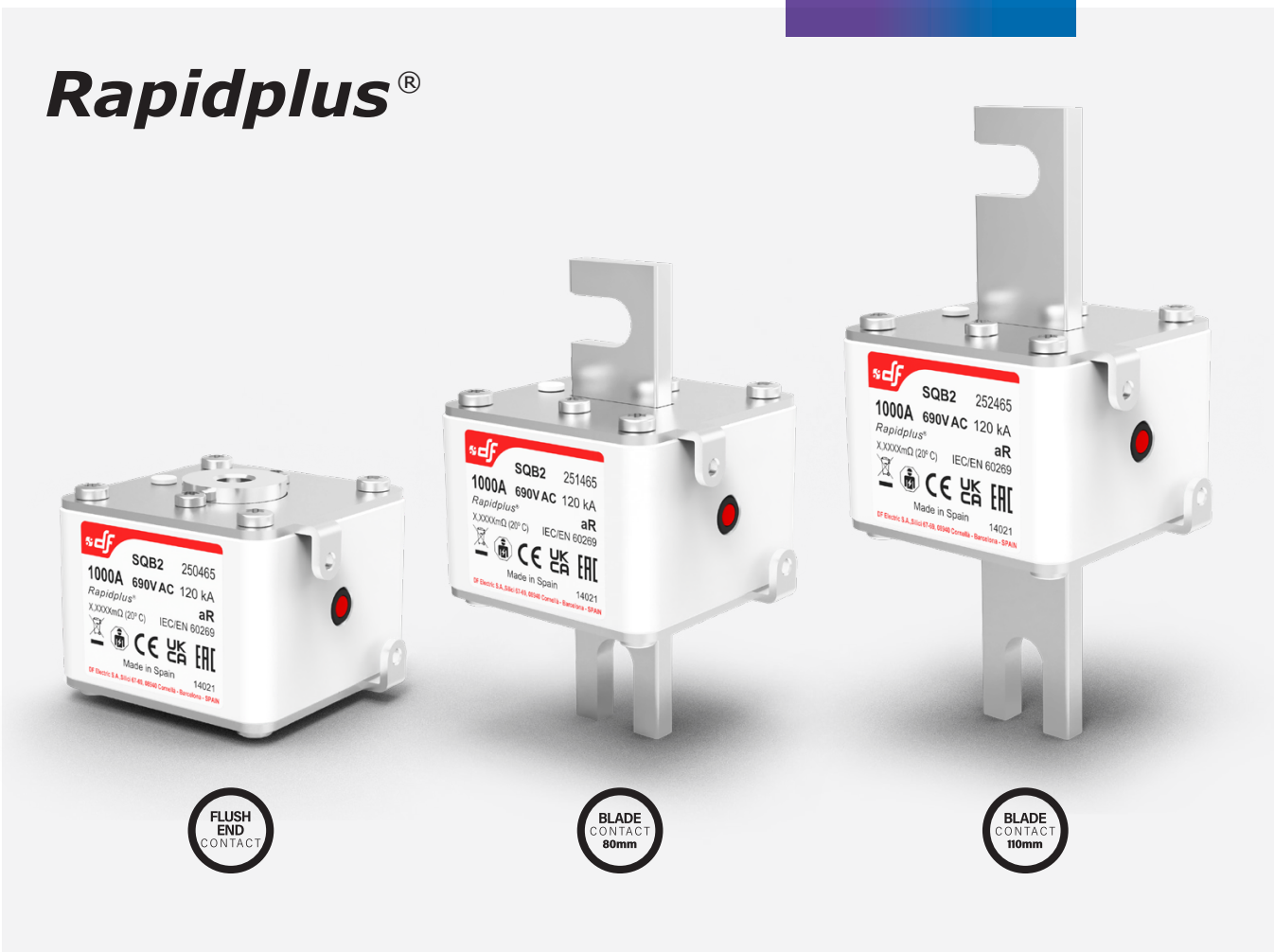
NEW

Fuse links specially designed for protection of power semiconductor devices.

Typical application comprise protection of diodes, thyristors, triacs and IGBTs, used in power rectifiers, UPS, converters, motor drives, soft starters, solid state relays, photovoltaic inverters, welding inverters and any application in power electronics, where it is necessary to protect power semiconductor devices.

rated voltage	standards
690V AC	IEC/EN 60269-1 IEC/EN 60269-4 UL248-1 UL248-13
rated current	
400A .. 1000A	

Rapidplus®



semiconductors

SQB3 Square body aR fuse links

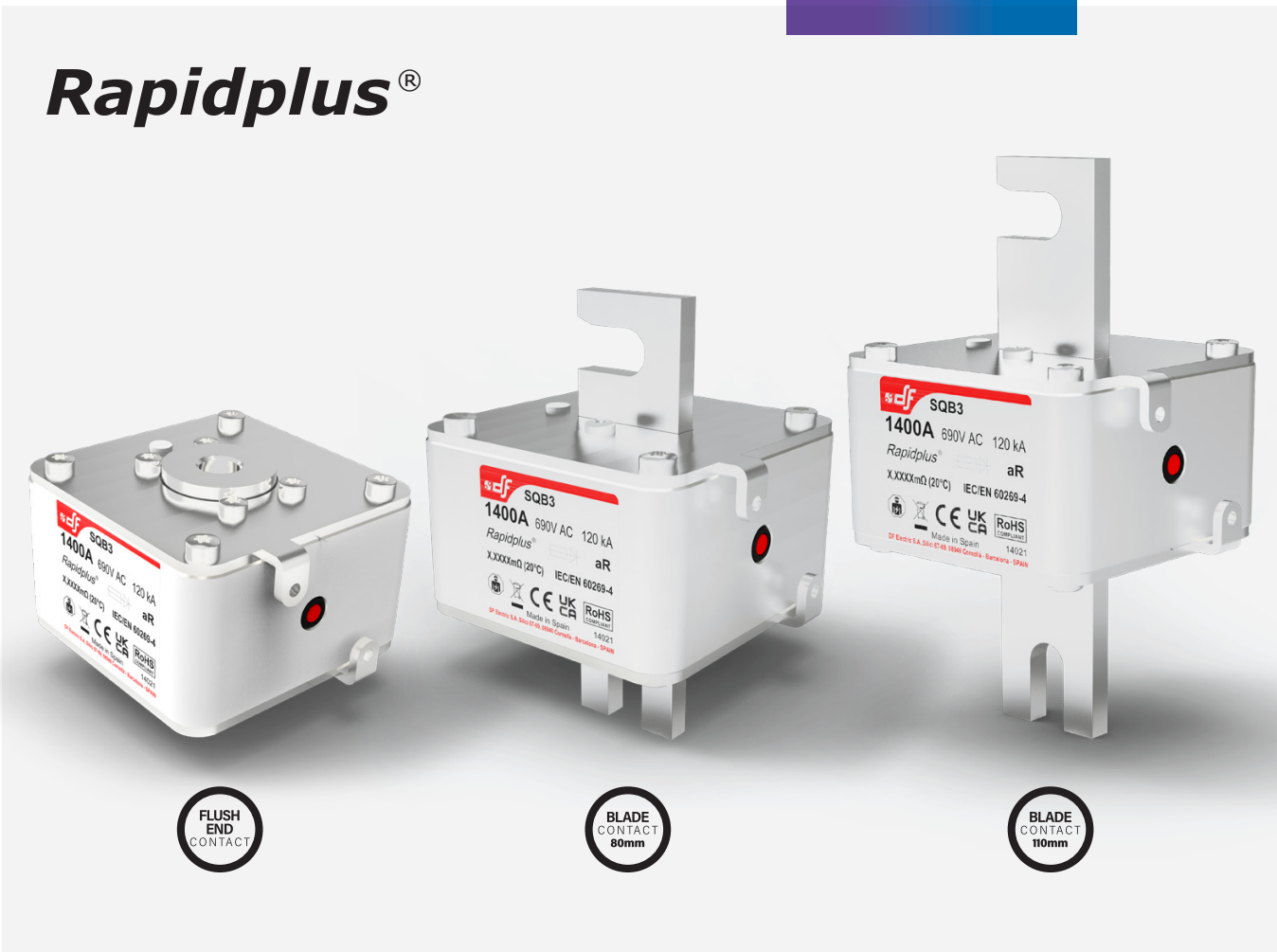
NEW

Fuse links specially designed for protection of power semiconductor devices.

These fuse links have a trip indicator that can be used as a visual indication or can be equipped with a microswitch mounted directly on the fuse link.

rated voltage	standards
690V AC	IEC/EN 60269-1 IEC/EN 60269-4 UL248-1 UL248-13
rated current	
500A _ 1400A	

Rapidplus®



NH knife-blade

NH Knife-blade type fuse links.

NH fuse links have a ceramic body and blade-style terminals. These fuses are larger and have higher ratings than the cylindrical fuses.

NH fuse links are widespread in industrial plants as well as in public mains electricity applications, e.g., in electrical substations and electrical distribution boards, or in house junction boxes in buildings.

NH knife-blade

gG 500V NH fuse links

NH Knife-blade
type gG 500V
fuse links.

These high breaking capacity fuse links are intended for protection of power lines and equipment, against overloads and short-circuits with rated voltages up to 500V AC (+10%).

rated voltage	standards
500V AC	IEC/EN 60269-1 IEC/EN 60269-2
rated current	
2A .. 1250A	

NH knife-blade

gG 690V NH fuse links

NH Knife-blade
type gG 690V
fuse links.

These high breaking capacity fuse links are intended for protection of power lines and equipment, against overloads and short-circuits with rated voltages up to 690V AC (+5%).

rated voltage	standards
690V AC	IEC/EN 60269-1 IEC/EN 60269-2
rated current	
2A .. 800A	

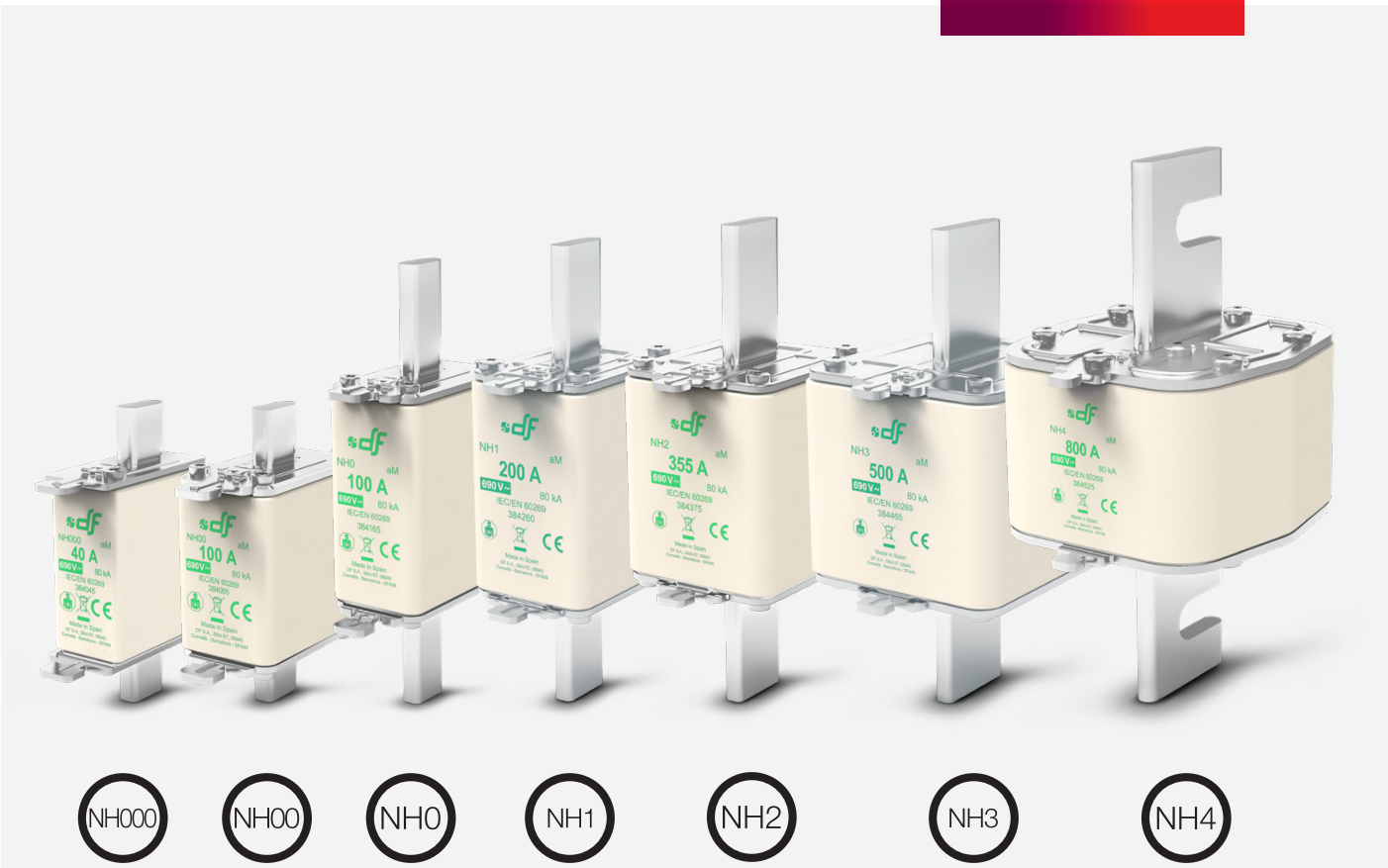
NH knife-blade

aM 500V/690V NH fuse links

NH Knife-blade type aM 500V/690V fuse links for motor protection.

These high breaking capacity fuse links are intended for short circuit protection in motors, transformer and other load with high inrush currents, with rated voltages up to 690V (+5%).

rated voltage	standards
500V AC 690V AC	IEC/EN 60269-1 IEC/EN 60269-2
rated current	
6A _ 1250A	



NH knife-blade

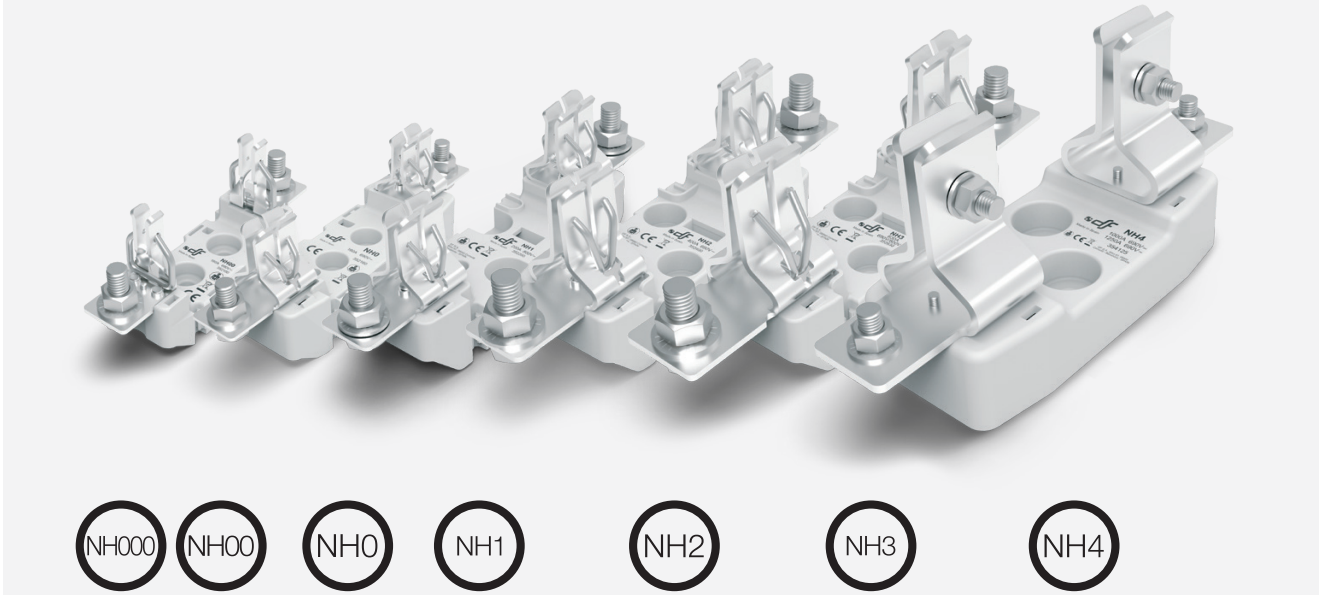
NH ST 690V/800V NH fuse bases

NH ST fuse bases for NH Knife-blade fuse links.

Fuse bases for NH fuse links. For mounting on DIN/EN rail or with screw fixing. Single-phase or three-pole type. Connection by screws, fixed nut or clamps.

Wide range of accessories (contact covers, fuse link covers, partition walls) that enables IP20 protection index. Multi-pole units can be made with connection accessories.

rated voltage	standards
690V AC 800V AC	IEC/EN 60269-1 IEC/EN 60269-2 DIN 43620
rated current	
160A 250A 400A 630A 1000A 1250A 2500A	



NH knife-blade

NH SN 690V

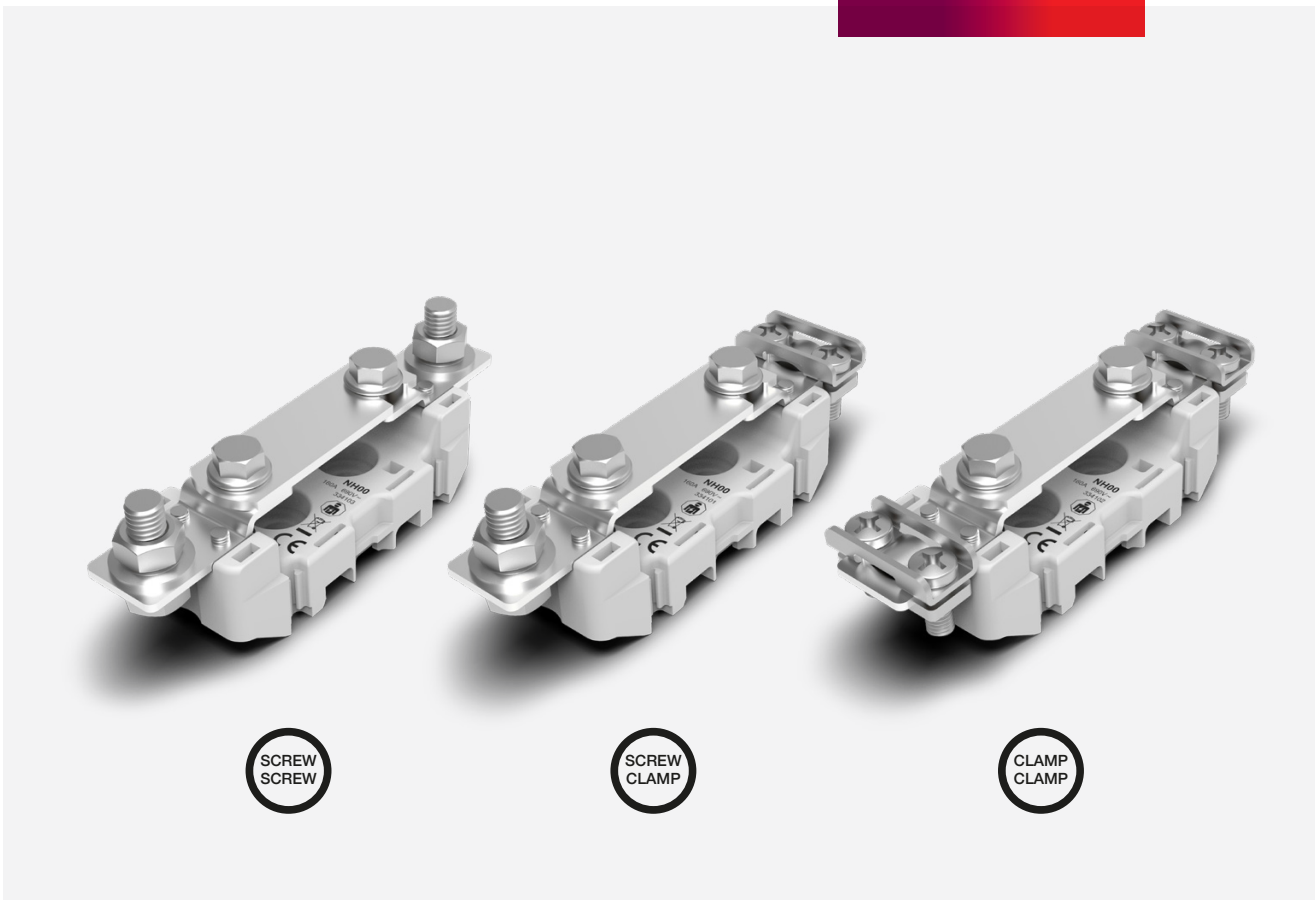
NH Sectionable neutral fuse bases

Sectionable neutral fuse bases.

Neutral bases for mounting with screw fixing. Connection by screws or clamps. NH00 and NH0 can be mounted in NH ST fuse bases with connection accessories.

Can be mounted in NH ST fuse bases with connection accessories.

rated voltage	standards
690V AC	IEC/EN 60269-1 IEC/EN 60269-2
rated current	
160A 250A 630A	



NH knife-blade

NH 3P BS Fuse switch disconnectors

Three poles
fuse switch
disconnectors
for NH fuse links.

Available from size 000 to size 3 for board fixing and a mode size 00 for mounting on 60 mm busbar system. They provide IP20 protection against contacts and are manufactured in self-extinguishable materials.

Voltage test performed through test holes in fuse link covers. Arc chutes with deionized steel plates over the top contact.

rated voltage	standards
690V AC	IEC/EN 60947-1 IEC/EN 60947-3
rated current	
160A _ 630A	

NH knife-blade

NH 1P BUC Fuse switch disconnectors

Single pole
fuse switch
disconnectors
for NH fuse links.

NH00 NH1 NH2

Single pole NH fuse switch disconnectors for NH fuse links (BUC). Available in sizes 00, 1 and 2. They provide IP20 protection against contacts. Ventilation zones optimized for a better heat dissipation. Manufactured in self-extinguishable materials.

rated voltage 500V AC/DC	**standards** IEC/EN 60947-1 IEC/EN 60947-3
rated current 160A .. 400A	

medium voltage

Cylindrical fuse links

Medium voltage
cylindrical fuse links.

MV cylindrical fuse links have a g breaking range (protection against overload and short-circuits) and are made with ceramic tubes having high breaking capacity and good withstand against thermal chock.

One of the applications of these fuse links are the protection of **supply networks of public lighting** at higher voltages (between 900V and 5.500V AC) usually used by means of special transformers designed for this purpose that increase the voltage for transportation and reduce it in the destination at adequate levels.

rated voltage	**standards**
1500V AC 2500V AC 3200V AC 5500V AC	
rated current 2A .. 12A	

multimeters

DMM multimeter fuse links

DMM fuse links are specially designed for the protection of multimeters.

They have fast acting characteristics and are available in two rated currents: 440mA and 11A.

Intended to carry 100% of rated current continuously.

rated voltage	**standards**
1000V AC/DC	
rated current	
440mA 11A	

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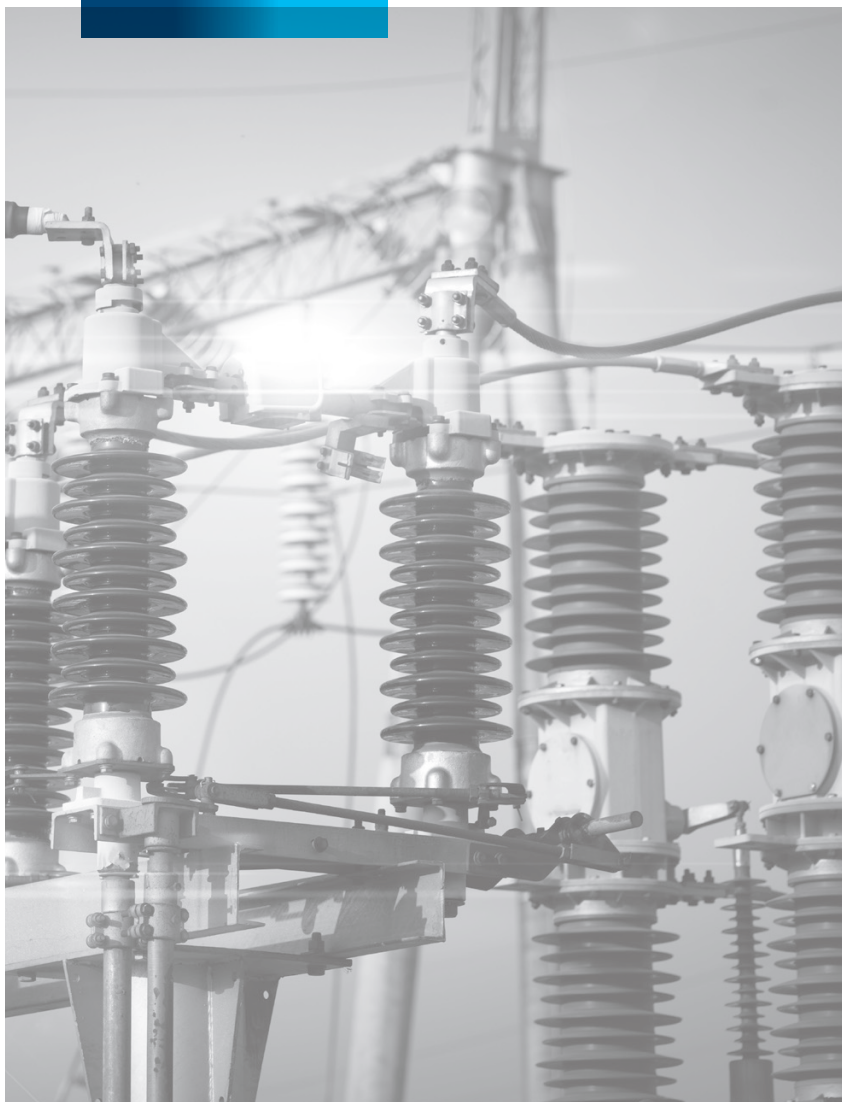
transformers



Low voltage transformers, autotransformers and reactors.

transformers

single-phase transformers

Dry type
single-phase
transformers.

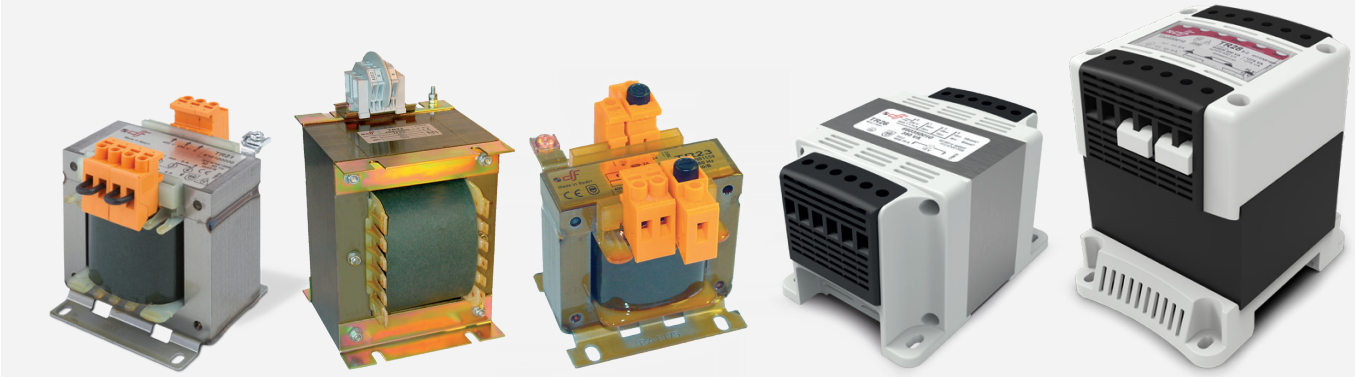
The dry type single-phase transformers has a rated power range between 10VA and 31,5 kVA. The transformers are manufactured according the

· IEC/EN 61558 Standards (safety, isolating, control, separating transformers),

· IEC/EN 60076 (power transformers)

There are different models of transformers depends of the protection index which can be IP00 or IP20, with Screw or Din rail fixing.

The different size transformers work 100% of the rated power in ambient temperatures up to 40°C.



TR21 TR22 TR23 TR26 TR28

power	standards
40VA .. 31,5kVA special transformers are designed on request	IEC/EN 61558 IEC/EN 60076

transformers

three-phase transformers

TRT33
Power isolating
three-phase
transformers.

IP00

IP23

TRT33

TRT33 transformers are three-phase isolating transformers and are specially intended for use as voltage adapter and/or when a galvanic isolation is required.

They are sized for continuous service at 100% of power in an ambient temperature up to 40°C. For ambient temperatures above 40°C it is necessary to apply a derating.

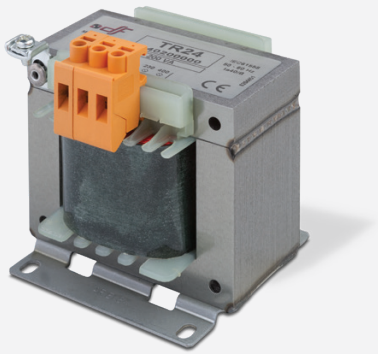
The most common vector group is Dyn5, others on request.

power	**standards**
0,1kVA .. 100kVA (IP00) 0,5kVA .. 100kVA (IP23)	IEC/EN 61558-1 IEC/EN 61558-2-1 IEC/EN 61558-2-2 IEC/EN 61558-2-4 IEC/EN 61558-2-6 IEC 60076-11

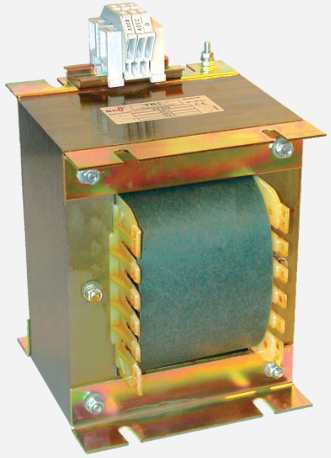
transformers

single-phase autotransformers

TR24 Reversible
Single-phase
autotransformers.



100VA ... 3000VA



4000VA
5000VA
6300VA

TR24

TR24 autotransformers are specially intended for use as voltage adapter when a economical solution is required.

Autotransformers have a small size (and small price) that a transformer with the same rated power. The main disadvantage is that the autotransformers do not have galvanic isolation. Neither can filter disturbances and interferences produced by harmonics or high frequency.

The main applications comprise the voltage adaptation in motors, electrical pumps, machinery, or air conditioned equipment.

power	**standards**
100VA .. 6,3kVA	IEC/EN 61558-1 IEC/EN 61558-2-13 IEC 60076-11

transformers

three-phase autotransformers

TRT30 Reversible three-phase autotransformers.

IP00

IP23

TRT30

TRT30 AL

TRT30 autotransformers are specially intended for use as voltage adapter when a economical solution is required.

Autotransformers have a small size (and small price) that a transformer with the same rated power. The main disadvantage is that the autotransformers do not have galvanic isolation. Neither can filter disturbances and interferences produced by harmonics or high frequency.

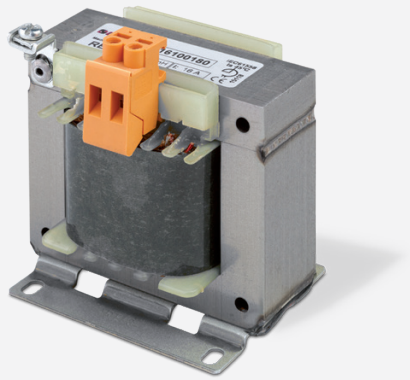
The main applications comprise the voltage adaptation in motors, electrical pumps, machinery, or air conditioned equipment. The TRT30 autotransformers are reversible, thus can be used as step up as well as step down autotransformers.

power	**standards**
0,5kVA .. 200kVA	IEC/EN 61558-1 IEC/EN 61558-2-13 IEC 60076-11

transformers

single-phase reactors

RE8 Line
single-phase reactors.



RE8

RE8 single-phase reactors are specially designed to be installed in the supply line of motor drives, power converters or similar devices, were they are intended to:

· Protect the converter against notches and network spikes

· Reduction of interferences between converters

· Limitation of inrush currents

· Reduction of harmonics, reducing the current andimproving
the power factor.

max voltage	**standards**
690V	IEC/EN 61558-2-20 IEC/EN 60076-6
current	
6A _ 63A	

transformers

three-phase reactors

RET9 LINE

RET9 HCF

RET9 Line three-phase reactors.

RET9 three-phase reactors are specially designed to be installed in the supply line of motor drives, power converters or similar devices, were they are intended to:

· Protect the converter against notches and network spikes

· Reduction of interferences between converters

· Limitation of inrush currents

· Reduction of harmonics, reducing the current and improving the power factor.

max voltage	**standards**
690V	IEC/EN 61558-2-20 IEC/EN60076-6
current	
10A .. 200A	

RET9 Harmonic circuit filter three-phase reactors.

RET9 three-phase reactors specially designed for give solutions to these disturbances can lead to a fast deterioration or destruction of the capacitor banks. The resonance effects can be avoided with the use of eactors in order to have a detuned system capacitor-reactor.

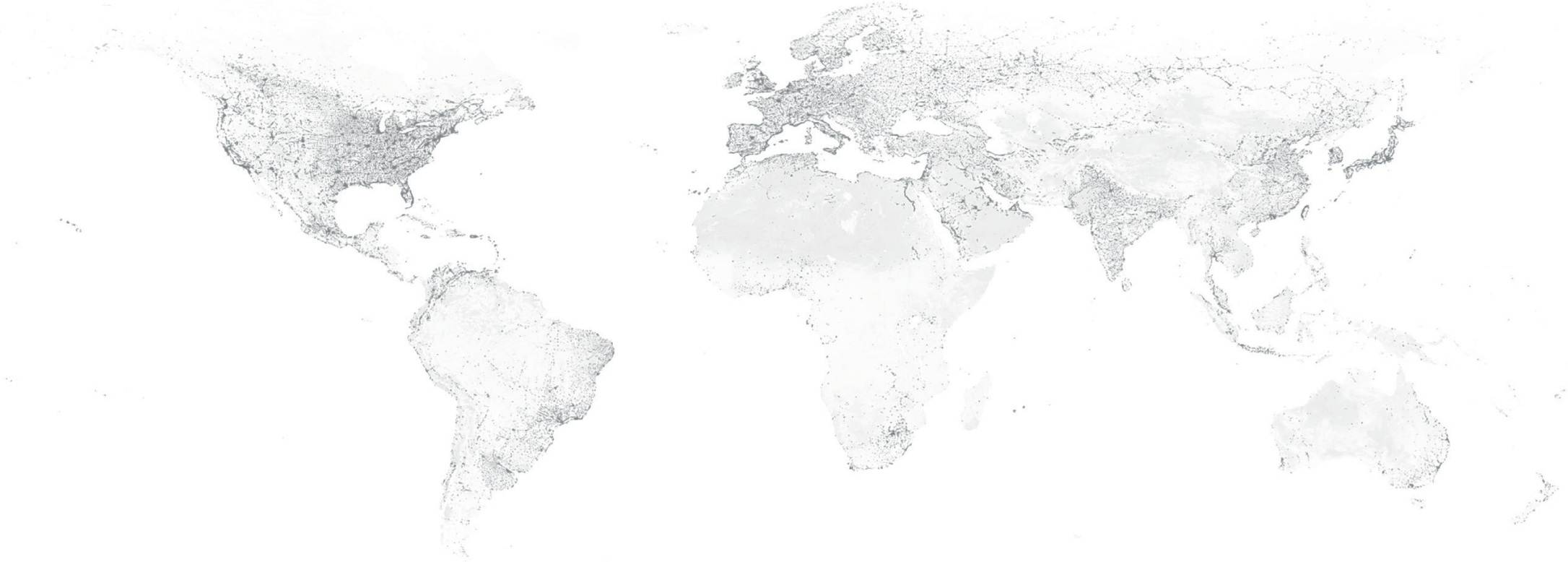
· Protection of the capacitors against harmonics

· Reduce the losses in the capacitors

· Reduce the inrush current of the capacitor banks, extend their life and reducing perturbations in the networkthe current andimproving the power factor.

max voltage	**standards**
400V	IEC/EN 61558-2-20 IEC/EN 60076-6
reactive power	
5kvar .. 80kvar	

PROTECTING THE WORLD



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