CITEL

New Surge Protectors ranges

AC / DC

CITEL

www.citel.fr

OUR OBJECTIVE
the safety of your equipment for 80 years

SINCE 1937

A LONG HISTORY...

As a family company, our philosophy since its creation and still today has been to offer innovative and reliable surge protectors to be the closest possible to the market demand.
With our international presence (6 subsidiaries in the world), our testing laboratories (3 sites: France, USA, China), our R & D (cutting edge technology and innovation), our products (reliability, robustness, certification), our goal is to ensure the safety of your equipment and that for 80 years.

1937
CITEL founded

1944
Manufacture of the first surge arrester

1985
CITEL USA

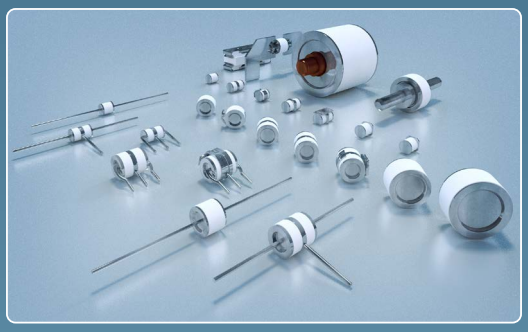
1988
CITEL Germany

1988
1st AC modular surge protector

1992
Reims factory

1996
CITEL Shanghaï

Factory & Sales



A UNIQUE COMPETENCE

Our only business is the surge protector, we are the only ones to manufacture our own component «gas discharge tube» that we integrate into our surge protection modules. With our know-how we have developed our own range of surge protective devices (SPD), sold to millions of units worldwide. Then in constant search for innovation, we have designed the VG technology, this exclusive and patented technology based on the use of specific gas discharge tube (GSG).

1997
- AC surge protector new range «DS» series
- VG Technology for AC surge protector

2010
CITEL Russia

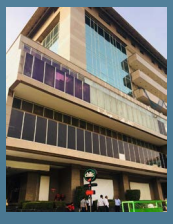
2012
Implementation of a test laboratory in Reims

2012
CITEL India

2017
New test laboratory 240 kA Citel China

2017
CITEL Thailand

2019
AC / DC new ranges



PROTECT YOUR INSTALLATIONS

against transient overvoltages due to lightning strikes and switching operations

Surge protector is an essential element of the protection strategy of our low voltage and photovoltaic powerline installations. It guarantees the safety and durability of the equipment and therefore contributes to a certain economy.

CITEL has completely renewed its product ranges in order to respond to the different sectors of the market activities and to different standards increasingly demanding.

- Energy
- Photovoltaic
- Led lighting
- Telecom
- Radiocom
- Industry
- Datacenter
- Security
- Internet of things
- GDT & GSG
- Renewable energies
- Smart city

INTERNATIONAL COLLABORATION OF OUR TEAMS

DESIGNED IN EUROPE, USA & CHINA

In collaboration with an industrial design specialist, we have designed and created a more reliable, efficient, ergonomic and practical module to anticipate the needs of our customers.

REALIZED IN FRANCE

Our research and development teams worked in collaboration: research of the best materials, global technical design, tests in our various laboratories, follow-up of the certifications in order to design a range that meets all the international requirements.

MANUFACTURED IN FRANCE AND CHINA

Manufactured, tested, controlled in our own factories in France and China, with strict quality system and our own tools.

CERTIFIED IN GERMANY AND USA

The necessary certification of the new ranges have been carried out in the German and US accredited laboratories.
Thanks to our expertise in surge tests, some certification processes have been performed in our own labs, under control of certification bodies.

THE NEW SPD GENERATION

Safer than ever !

SECURITY

The SPD is the safety element of the installation. Its role is to protect the equipment against transient overvoltages without failure. However, the SPD can be subjected to maximum attack conditions and must be able to support them in safety disconnection mode. As the leader of surge protection, we have designed surge protectors that meet the most extreme constraints, beyond the normative requirements.

PERFORMANCE

In order to ensure total safety during the use of our surge protectors, we have focused on :

- Safety disconnection
- Resistance to fire and short circuits
- Mechanical robustness

DESIGN AND ERGONOMICS

With its new design, CITEL surge protectors are easily identifiable in your installation.

EXCLUSIVE KNOW-HOW

CITEL is a specialist in the internal components of surge protectors : the Gas Spark Gap (GSG) and the varistors used are of our own design and we adapt them to obtain the best performances.

WARRANTY

Sure of our products, their warranty is extended to 5 years

A NEW TECHNOLOGY

STRENGTHENING OF INTERNAL PARTS

The robustness of the surge protector is essential to support the electromechanical forces generated during the passage of transient currents. We have reduced the internal impedances, improved the contacts, simplified and reinforced the conductive parts.

INCREASED QUALITY OF PLASTIC MATERIALS

The choice of plastic materials is guided by :
- Normative compliance (fire resistance, environment)
- Mechanical robustness
- Aesthetics

INNOVATIVE DESIGN OF INTERNAL DISCONNECTION

The internal disconnection mechanism of the device is the essential element of safety. The new concept, in case of internal heating, allows faster cut-off and reinforced insulation after disconnection.

SINCE 1998

CITEL VG TECHNOLOGY 3RD GENERATION

VG TECHNOLOGY

The exclusive VG Technology by CITEL offers unique hybrid technology and multiple benefits not found in traditional surge protection solutions. The patented design incorporates a **combination of MOV and Gas filled Spark-Gap (GSG) technology to maximize the SPD's performance level and reliability**. VG technology is optimized for robustness and network stability, providing the highest level of protection available.

BENEFITS OF VG TECHNOLOGY

BETTER USER EXPERIENCE

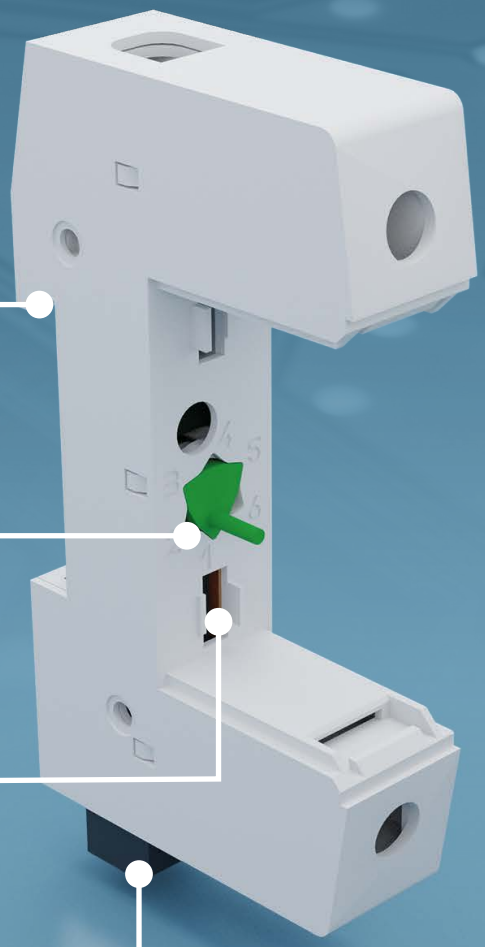
Products even more adapted to your needs

DIN RAIL MOUNTING

The modular format and symmetrical DIN rail mounting make the surge protector compliant with all installations.

VOLTAGE SELECTOR

Voltage selector avoid mistakes when replacing module.



CONTACT QUALITY

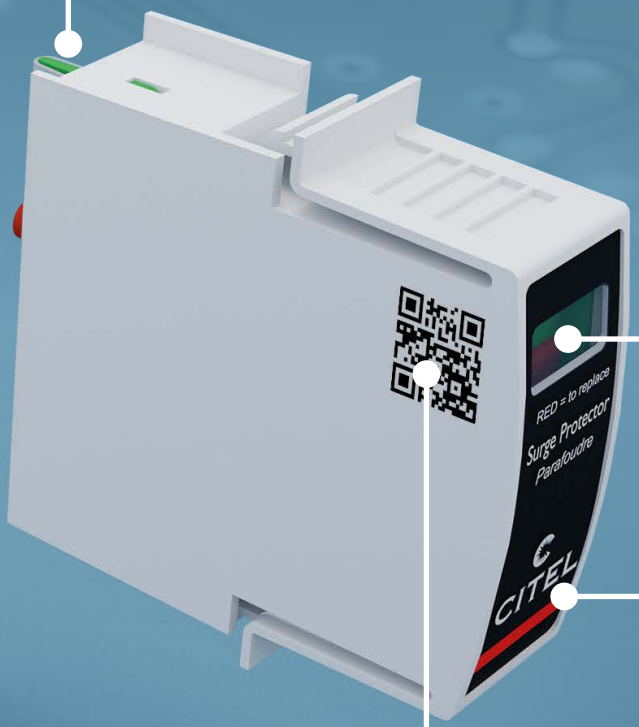
Surge protectors must conduct very high impulse currents and the plug-in contacts must withstand these constraints. Quality of materials, increased surface area, optimized elasticity and specific surface treatment are used to meet these requirements.

REMOTE SIGNALING

This option, to indicate the state of the arrester remotely, is recommended when the arrester is not easily accessible. In case of safety disconnection of one or more modules, the internal contact switches and can activate any remote device.

EASY PLUGGABLE

The plugging and unplugging operation is greatly improved thanks to the quality of the module / base contacts. The extraction of the pluggable modules in case of maintenance is largely facilitated.



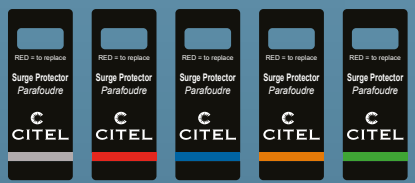
DISCONNECTION INDICATOR

At the end of its life, the surge protector disconnects from the network and must indicate its state. The indicator clearly informs user about the need to replace the out-of-service module.

- Green = OK
- Red or Not green = Disconnected

IDENTIFICATION

The colored band on the front of the module makes it possible to identify its use or its type. Grey for AC type 1, Red for AC type 2, Blue for AC type 3, Orange for DC, Green for N/PE branch (GDT).



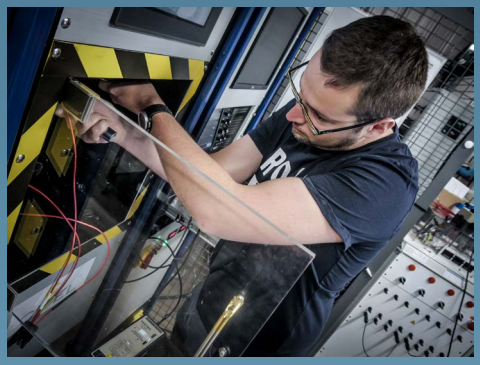
QR CODE

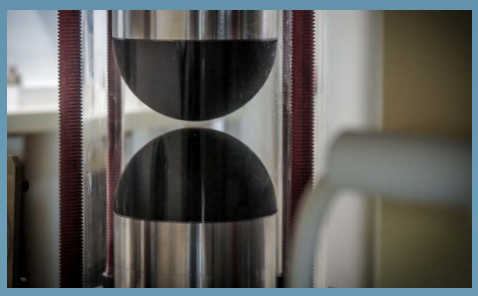
The QR code refers to the product installation instruction allowing a permanent availability of this essential document.

A CERTIFIED RANGE
for the standards of today and tomorrow

STANDARDS
Surge Protection standards are changing and constraints are tightening with each new edition. Several CITEL experts, members of national and international committees, are involved in the development of these standards, to be close to the requirements of the market.

This range has been designed to last and therefore to anticipate future changes in standards.





INTERNAL TESTS
All the technological choices of our ranges were first tested in our testing laboratories, to validate compliance with current standards, but also by providing a functional margin beyond the requirements and anticipate future developments.

CERTIFICATIONS
The final step is certification provided by the official certifications organizations. Thanks to our expertise in surge tests, a part of the process has been performed in our own facilities, under control of official certification bodies.

OUR MEANS OF TESTING
In order to test its products internally for standards compliance and to evolve toward greater reliability, CITEL has several test sites (France, USA, China) equipped with:

- Current impulse generators up to 240 kA - 8/20µs
- Current impulse generators up to 100 kA - 10/350µs
- 1.2/50-8/20µs hybrid wave generators up to 20 kV/10 kA
- 400 Vac 3-phase low voltage network-Isc 1.5 kA/phase for coupling with current impulse
- HT fast digital oscilloscopes
- Materials for test environment (damp heat, climate, shock)
- Ultra-fast camera

THE SPD WHICH PROTECTS

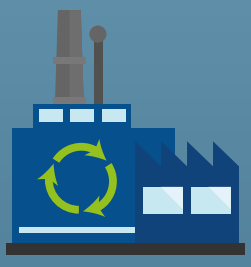
your equipment and our planet

Besides our constant work on the quality of our products, we take into account the ecological issues of our planet.

This is why CITEL is working to optimize its production equipment in order to reduce the impact on the environment. We have chosen for our new range high quality raw materials.

Our products use **HALOGEN FREE** material and comply with **RoHS** regulations.
CITEL is **ISO 14001** certified and meet the requirements of the **WEEE** directive.

Production respecting environmental standards



Purchase of materials compliant with the environmental regulations

Commitment for recycling

NEW DAC RANGE FOR AC & DC NETWORK

A COMPLETE RANGE WITH MANY OPTIONS

The new ranges of SPDs have been designed by CITEL to answer to all the needs of AC or DC power surge protection in accordance with standards. Type 1+2+3 versions, Compact units, integrated electrical fuse, DC power versions, VG techonogy...all these features allow a optimized selection of the relevant SPD in close relation with the installation requirements.

SINCE 1998 CITEL VG TECHNOLOGY 3RD GENERATION

COMPACT VERSION

INTEGRATED FUSE

DC POWER

REMOTE SIGNALING

AC TYPE 1 RANGE

DAC1-13 / DAC1-13VG

OPTIONS

REMOTE SIGNALING

- Extreme duty pluggable Type 1+2+3 or Type 1+2 SPDs designed to protect AC powerline at the main switchboard of an installation equipped with lightning rod (LPS).
- Available in multipolar versions to protect single or 3-phase AC networks
- Equipped with a high efficiency internal disconnector linked to a front disconnection indicator and a remote signalling feature (option).
- Very high discharge current capability in small dimensions and the best possible behavior to the AC network (no follow current).
- In option : VG technology

AC TYPE 2 RANGE

DAC50 / DAC50VG / DACF25

OPTIONS

INTEGRATED FUSE

REMOTE SIGNALING

- Pluggable surge protectors Type 2 or Type 2+3 designed to protect AC powerline at the main switchboard of the installation.
- Based on high energy varistor equipped with thermal disconnector and failure indicator to provide a maximum protection efficiency, an high impulse current capability and a improved reliability.
- Available in multipolar version and in several voltages to protect single or 3-phase networks.
- In option : VG technology.
- Available with an internal fuse against short-circuit currents, which avoids the use of a external fuse or circuit-breaker as requested by standard (DACF25).

AC COMPACT RANGE

DAC40C / DAC15C

OPTIONS

REMOTE SIGNALING

- Pluggable compact surge protectors Type 2 or Type 3 designed to protect electrical installation at the main switchboard or at secondary panels.
- Compact format which allow to install it in limited space.
- Based on high energy varistor equipped with thermal disconnector and failure indicator, guaranteeing a maximum protection efficiency, an high impulse current capability and a improved reliability.
- Available in 2 impulse current versions, in multipolar configuration and in several operating voltages to protect all kind of single or 3-phase AC networks.

DC & DC COMPACT RANGE

DDC /DDCC

OPTIONS

COMPACT VERSION

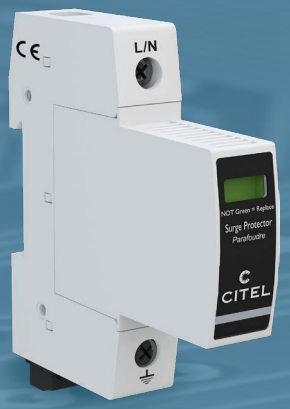
REMOTE SIGNALING

- Type 1+2 or Type 2 pluggable surge protectors designed for equipment connected to DC powerlines.
- Technology based on high energy varistor equipped with thermal disconnection mechanism which offers protection efficiency and and a maximal reliability.
- Available in compact version from 12 to 350 Vdc DC powerline.

DAC1-13VG series

Type 1 + 2 + 3 AC Surge Protectors

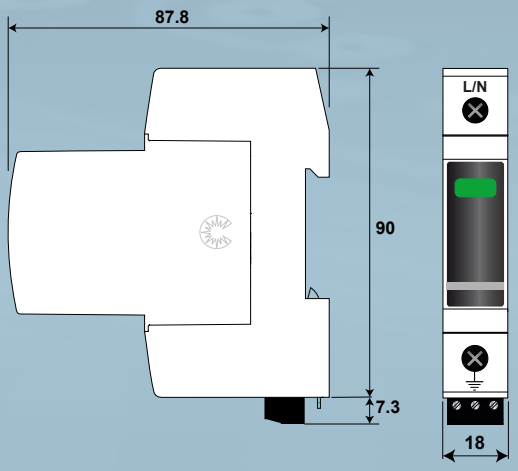
10-year WARRANTY

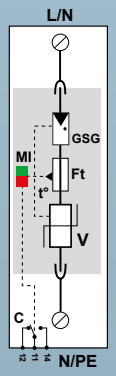


SINCE 1998 CITEL VG TECHNOLOGY 3RD GENERATION

- **VG Technology**
- **In : 20 kA**
- **Iimp : 12.5 kA @ 10/350µs impulse**
- **Itotal : 50 kA @ 10/350µs impulse (3L+N)**
- **Remote signaling (option)**
- **No leakage current**
- **Optimized to TOV**
- **EN 61643-11, IEC 61643-1 certified**
- **UL1449 ed.4 compliance**

Mechanical & Electrical diagrams





V : High energy varistor network
GSG : Specific gas Tube
Ft : Thermal fuse
C : Remote signaling contact
t° : Thermal disconnection system
MI : Disconnection indicator

Characteristics

CITEL Model		DAC1-13VG-10-320	DAC1-13VG-10-275	DAC1-13VG-10-150
Description		Type 1+2+3 AC surge protector - one-pole		
Max. AC operating voltage	Uc	320 Vac	275 Vac	150 Vac
Temporary Over Voltage (TOV) characteristic - 5 sec.	UT	335 Vac withstand	335 Vac withstand	180 Vac withstand
Temporary Over Voltage (TOV) characteristic - 120 mn	UT	440 Vac withstand	440 Vac withstand	230 Vac withstand
Residual current - *Leakage current at Uc*	Ipe	None	None	None
Follow current	If	None	None	None
Nominal discharge current 15 x 8/20 µs impulses	In	20 kA	20 kA	20 kA
Max. discharge current *max. withstand @ 8/20 µs by pole*	Imax	50 kA	50 kA	50 kA
Impulse current by pole *max. withstand 10/350µs*	Iimp	12.5 kA	12.5 kA	12.5 kA
Specific energy by pole	W/R	40 kJ/ohm	40 kJ/ohm	40 kJ/ohm
Withstand on Combination waveform *Class III test*	Uoc	6 kV	6 kV	6 kV
Protection level *@ In (8/20µs) and 6 kV (1.2/50µs)*	Up	1.5 kV	1.5 kV	1.5 kV
Residual Voltage *@ 5 kA (8/20µs)*	Up-5kA	0.9 kV	0.7 kV	0.4 kV
Admissible short-circuit current	Isccr	50 000 A	50 000 A	50 000 A
Associated disconnectors				
Thermal disconnector		Internal		
Fuses		125 A min. - 315 A max. - gG type		
Existing upstream ground fault breaker (if any)		Type «S» or delayed		
Mechanical characteristics				
Dimensions		see diagram - 1TE (EN43880)		
Connection to Network		By screw terminals: 2.5-25 mm² (35mm² rigid)		
Failsafe Mode		Disconnection from AC network		
Disconnection indicator		1 mechanical indicator Green/Red		
Remote signaling of disconnection output on changeover contact		option DAC1-13VGS-10-320	option DAC1-13VGS-10-275	option DAC1-13VGS-10-150
Max. voltage/current for remote signaling		250 V/0.5 A (AC) / 30 V/2 A (DC)		
Wiring for remote signaling		1.5 mm² max.		
Mounting		Symmetrical rail 35 mm (EN60715)		
Operating temperature		-40/+85°C		
Protection rating		IP20		
Housing material		Thermoplastic UL94-V0		
Spare unit		MDAC1-13VG-320	MDAC1-13VG-275	MDAC1-13VG-150
Standards				
Certification		IEC 61643-11 / EN 61643-11		
Compliance		UL1449 ed.4		
Part number				
		821730311	821730211	821730111

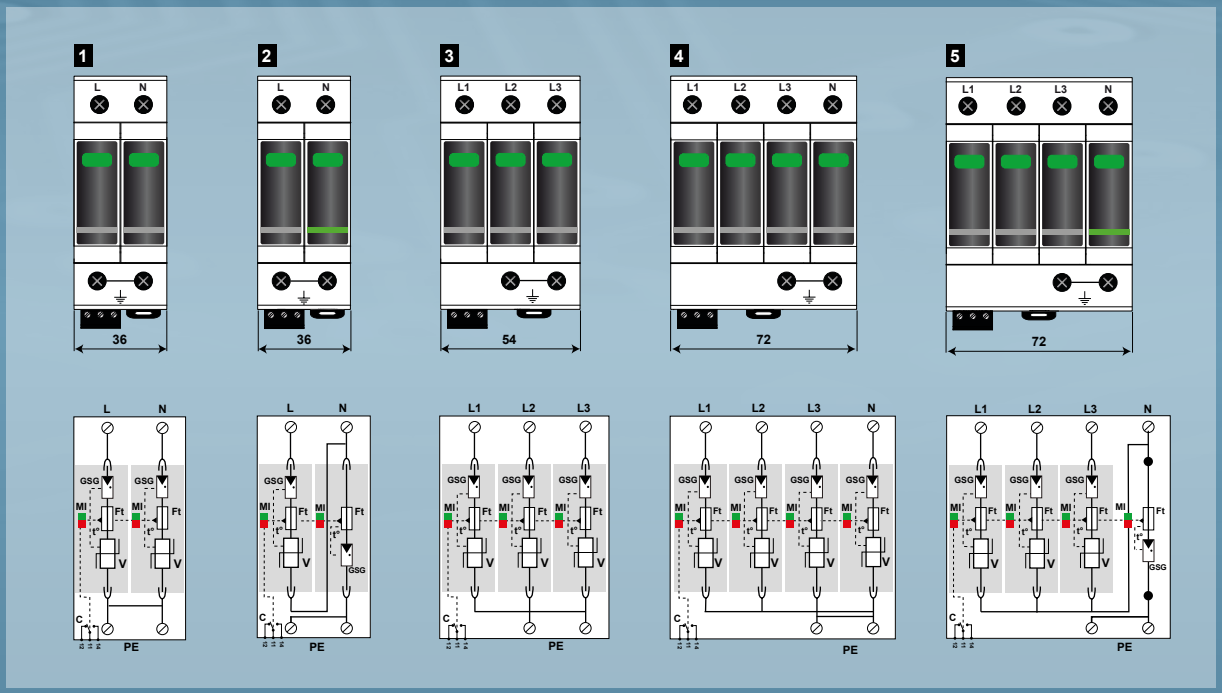
DAC1-13VG series

Type 1 + 2 + 3 AC Multipolar Surge Protectors

DAC1-13VGS-xx-xxx

- Maximum operating voltage
- Configuration: 10 (1+0), 11 (1+1), 20 (2+0), 30 (3+0), 40 (4+0), 31 (3+1)
- «S» Remote signal option
- «VG» VG-Technology
- «13» Iimp: 12.5 kA

Mechanical & Electrical diagrams



Characteristics

Model	P/N	Network	AC system	Protection Mode	Itotal	Up L/PE	Up L/N	Up N/PE	Dimension EN43880	Diagram
DAC1-13VG-31-320	821730334	230/400 V 3-Phase+N	TT-TNS System (3+1)	L/N and N/PE	50 kA	-	1.5 kV	1.5 kV	4 TE	5
DAC1-13VG-31-275	821730234	230/400 V 3-Phase+N	TT-TNS System (3+1)	L/N and N/PE	50 kA	-	1.5 kV	1.5 kV	4 TE	5
DAC1-13VG-31-150	821730134	120/208 V 3-Phase+N	TT-TNS System (3+1)	L/N and N/PE	50 kA	-	1.5 kV	1.5 kV	4 TE	5
DAC1-13VG-40-320	821730314	230/400 V 3-Phase+N	TNS System (4+0)	L/PE and N/PE	50 kA	1.5 kV	-	1.5 kV	4 TE	4
DAC1-13VG-40-275	871730214	230/400 V 3-Phase+N	TNS System (4+0)	L/PE and N/PE	50 kA	1.5 kV	-	1.5 kV	4 TE	4
DAC1-13VG-40-150	821730114	120/208 V 3-Phase+N	TNS System (4+0)	L/PE and N/PE	50 kA	1.5 kV	-	1.5 kV	4 TE	4
DAC1-13VG-30-320	821730313	230/400 V 3-Phase	TNC System (3+0)	L/PE	37.5 kA	1.5 kV	-	-	3 TE	3
DAC1-13VG-30-275	821730213	230/400 V 3-Phase	TNC System (3+0)	L/PE	37.5 kA	1.5 kV	-	-	3 TE	3
DAC1-13VG-30-150	821730113	120/208 V 3-Phase	TNC System (3+0)	L/PE	37.5 kA	1.5 kV	-	-	3 TE	3
DAC1-13VG-11-320	821730332	230 V single phase	TT-TN System (1+1)	L/N and N/PE	25 kA	-	1.5 kV	1.5 kV	2 TE	2
DAC1-13VG-11-275	821730232	230 V single phase	TT-TN System (1+1)	L/N and N/PE	25 kA	-	1.5 kV	1.5 kV	2 TE	2
DAC1-13VG-11-150	821730132	120 V single phase	TT-TN System (1+1)	L/N and N/PE	25 kA	-	1.5 kV	1.5 kV	2 TE	2
DAC1-13VG-20-320	821730312	230 V single phase	TN System (2+0)	L/PE and N/PE	25 kA	1.5 kV	-	1.5 kV	2 TE	1
DAC1-13VG-20-275	821730212	230 V single phase	TN System (2+0)	L/PE and N/PE	25 kA	1.5 kV	-	1.5 kV	2 TE	1
DAC1-13VG-20-150	821730112	120 V single phase	TN System (2+0)	L/PE and N/PE	25 kA	1.5 kV	-	1.5 kV	2 TE	1

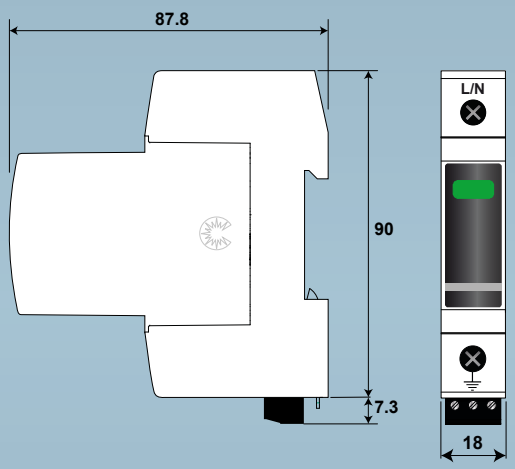
DAC1-13 Series

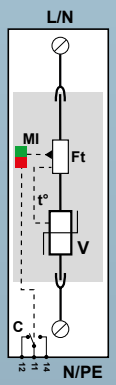
Type 1 + 2 AC Surge Protectors

5-year WARRANTY

- **Pluggable Type 1+2 AC power SPD**
- **In : 20 kA**
- **Iimp : 12.5 kA @ 10/350µs impulse**
- **Itotal : 50 kA @ 10/350µs impulse (3L+N)**
- **Remote signaling (option)**
- **EN 61643-11, IEC 61643-1 certified**
- **UL1449 ed.4 compliance**

Mechanical & Electrical diagrams





V : High energy varistor network
Ft : Thermal fuse
C : Remote signaling contact
t° : Thermal disconnection system
MI : Disconnection indicator

Characteristics

CITEL Model		DAC1-13-10-440	DAC1-13-10-320	DAC1-13-10-275	DAC1-13-10-150
Description		1+2 AC surge protector - 1-pole			
Max. AC operating voltage	Uc	440 Vac	320 Vac	275 Vac	150 Vac
Temporary Over Voltage (TOV) Characteristic - 5 sec.	UT	580 Vac withstand	335 Vac withstand	335 Vac withstand	180 Vac withstand
Temporary Over Voltage (TOV) Characteristic -120 mn	UT	770 Vac disconnection	440 Vac disconnection	440 Vac disconnection	230 Vac disconnection
Residual current *Leakage current at Uc*	Ipe	< 1 mA	< 1 mA	< 1 mA	< 1 mA
Follow current	If	None	None	None	None
Nominal discharge current *15 x 8/20 µs impulses*	In	20 kA	20 kA	20 kA	20 kA
Max. discharge current *max. withstand @ 8/20 µs by pole*	Imax	50 kA	50 kA	50 kA	50 kA
Impulse current by pole *max. withstand 10/350µs*	Iimp	12.5 kA	12.5 kA	12.5 kA	12.5 kA
Specific energy by pole	W/R	40 kJ/ohm	40 kJ/ohm	40 kJ/ohm	40 kJ/ohm
Protection level *@ In (8/20µs)*	Up	1.7 kV	1.6 kV	1.3 kV	0.9 kV
Residual volatage *@ 5kA (8/20µs)*	Up-5kA	1.5 kV	1.2 kV	1 kV	0.6 kV
Admissible short-circuit current	Isccr	50 000 A	50 000 A	50 000 A	50 000 A
Associated disconnectors					
Thermal disconnector		internal			
Fuses		125 A min. - 315 A max. - gG type			
Existing upstream ground fault breaker (if any)		Type "S" or delayed			
Mechanical characteristics					
Dimensions		see diagram, 1TE, EN 43880			
Connection to Network		By screw terminals: 2.5-25 mm² (35mm² rigid)			
Failsafe mode		Disconnection from AC network			
Disconnection indicator		1 mechanical indicator Green/Red			
Remote signaling of disconnection output on changeover contact		option DAC1-13**S**-10-440	option DAC1-13**S**-10-320	Option DAC1-13**S**-10-275	option DAC1-13**S**-10-150
Max. voltage/current for remote signaling		250 V/0.5 A (AC) / 30 V/2 A (DC)			
Wiring for remote signaling		max 1.5 mm²			
Mounting		Symmetrical rail 35 mm (EN60715)			
Operating temperature		-40/+85°C			
Protection rating		IP20			
Housing material		Thermoplastic UL94-V0			
Spare unit		MDAC1-13-440	MDAC1-13-320	MDAC1-13-275	MDAC1-13-150
Standards					
Certification		EN 61643-11, IEC 61643-11			
Compliance		UL1449 ed.4			
Part number					
		821710411	821710311	821710211	821710111

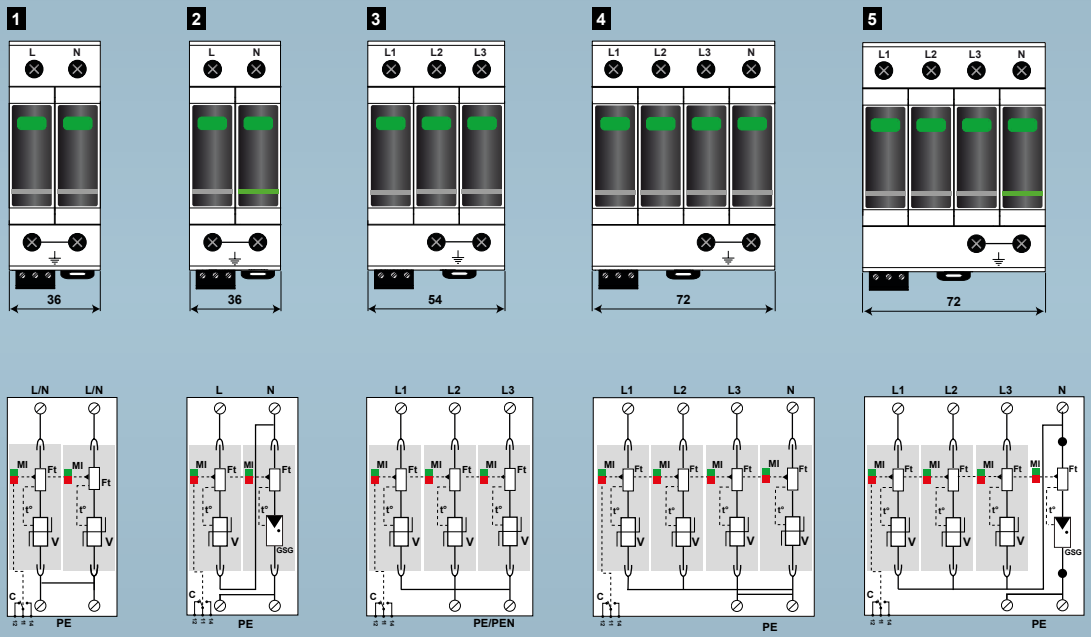
DAC1-13 Series

Type 1 + 2 AC Multipolar Surge Protectors

DAC1-13S-xx-xxx

- Maximum operating voltage
- Configuration: 10 (1+0), 11 (1+1), 20 (2+0), 30 (3+0), 40 (4+0), 31 (3+1)
- «S» Remote signal option
- «13» Iimp: 12.5 kA

Mechanical & Electrical diagrams



Characteristics

Model	P/N	Network	AC system	Protection Mode	Itotal	Up L/PE	Up L/N	Up N/PE	Dimension EN43880	Diagram
DAC1-13-31-320	821710334	230/400 V 3-Phase+N	TT-TNS System (3+1)	L/N and N/PE	50 kA	-	1.6 kV	1.5 kV	4 TE	
DAC1-13-31-275	821710234	230/400 V 3-Phase+N	TT-TNS System (3+1)	L/N and N/PE	50 kA	-	1.3 kV	1.5 kV	4 TE	5
DAC1-13-31-150	821710134	120/208 V 3-Phase+N	TT-TNS System (3+1)	L/N and N/PE	50 kA	-	0.9 kV	1.5 kV	4 TE	
DAC1-13-40-440	821710414	230/400 V 3-Phase+N	IT System (4+0)	L/PE and N/PE	50 kA	1.7 kV	-	1.7 kV	4 TE	4
DAC1-13-40-320	821710314	230/400 V 3-Phase+N	TNS System (4+0)	L/PE and N/PE	50 kA	1.6 kV		1.3 kV	4 TE	4
DAC1-13-40-275	821710214	230/400 V 3-Phase+N	TNS System (4+0)	L/PE and N/PE	50 kA	1.3 kV	-	1.3 kV	4 TE	4
DAC1-13-40-150	821710114	120/208 V 3-Phase+N	TNS System (4+0)	L/PE and N/PE	50 kA	0.9 kV	-	0.9 kV	4 TE	3
DAC1-13-30-440	821710413	230/400 V 3-Phase	IT System (3+0)	L/PE	37.5 kA	1.7 kV	-	-	3 TE	3
DAC1-13-30-320	821710313	230/400 V 3-Phase	TNC System (3+0)	L/PE	37.5 kA	1.6 kV	-	-	3 TE	3
DAC1-13-30-275	821710213	230/400 V 3-Phase	TNC System (3+0)	L/PE	37.5 kA	1.3 kV	-	-	3 TE	3
DAC1-13-30-150	821710113	120/208 V 3-Phase	TNC System (3+0)	L/PE	37.5 kA	0.9 kV	-	-	3 TE	3
DAC1-13-11-320	821710332	230 V single phase	TT-TN System (1+1)	L/N and N/PE	25 kA	-	1.6 kV	1.5 kV	2 TE	2
DAC1-13-11-275	821710232	230 V single phase	TT-TN System (1+1)	L/N and N/PE	25 kA	-	1.3 kV	1.5 kV	2 TE	2
DAC1-13-11-150	821710132	120 V single phase	TT-TN System (1+1)	L/N and N/PE	25 kA	-	0.9 kV	1.5 kV	2 TE	2
DAC1-13-20-440	821710412	230 V single phase	IT System (2+0)	L/PE and N/PE	25 kA	1.7 kV	-	1.7 kV	2 TE	1
DAC1-13-20-320	821710312	230 V single phase	TN System(2+0)	L/PE and N/PE	25 kA	1.6 kV	-	1.6 kV	2 TE	1
DAC1-13-20-275	821710212	230 V single phase	TN System(2+0)	L/PE and N/PE	25 kA	1.3 kV	-	1.3 kV	2 TE	1
DAC1-13-20-150	821710112	120 V single phase	TN System (2+0)	L/PE and N/PE	25 kA	0.9 kV	-	0.9 kV	2 TE	1

ZPAC1 Series

Type 1+2+3 AC surge protector - 3-phase+N

10-year WARRANTY

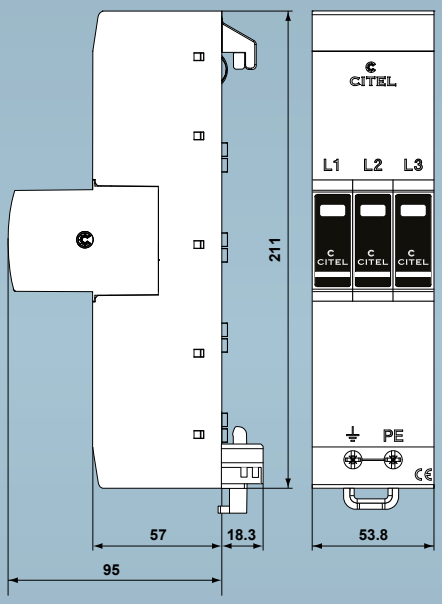
SINCE 1998 CITEL VG TECHNOLOGY 3RD GENERATION

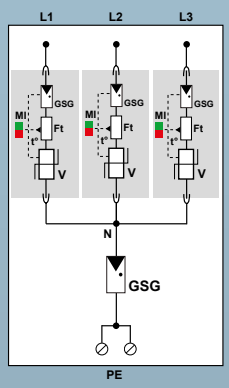
- Type 1+2+3 AC SPD for 40 mm busbar systems
- Ultra fast and error-free mounting
- Pluggable modules
- VG Technology
- In : 20 kA
- Iimp : 12.5kA or 8 kA
- Iimp total : 50 kA or 32 kA
- No leakage current
- Optimized to TOV
- EN 61643-11 / IEC 61643-11 certified
- UL1449 ed. 4 compliance
- VDE-AR-N 4100 compliance (use of Type 1 overvoltage protection devices (SPD) in main power supply systems)

ZPAC1-xxVG-xx-xxx

- Maximum operating voltage
- Configuration: 31 (3+1)
- «VG» Technology
- «13» Iimp: 12.5 kA
  «8» Iimp: 8 kA

Mechanical & Electrical diagrams





V : High energy varistor network
GSG : Specific gas Tube
Ft : Thermal fuse
t° : Thermal disconnection system
MI : Disconnection indicator

Characteristics

CITEL model		ZPAC1-13VG-31-275	ZPAC1-8VG-31-275
Network	Un	230/400 V 3L+N	230/400 V 3L+N
Max. AC operating voltage	Uc	275 Vac	275 Vac
Frequency	fn	0 - 100 Hz	0 - 100 Hz
Temporary over voltage (TOV) characteristics - 5 sec.	UT	335 Vac withstand	335 Vac withstand
Temporary Over Voltage (TOV) characteristics - 120 mn	UT	440 Vac withstand	440 Vac withstand
Temporary Over Voltage N/PE (TOV HT)	UT	1200 V/300 A/200 ms withstand	1200 V/300 A/200 ms wihtstand
Residual current - *Leakage current at Uc*	Ipe	None	None
Follow current	If	None	None
Nominal discharge current *15 x 8/20µs impulses*	In	20 kA	20 kA
Maximum discharge current *max withstand @ 8/20 µs by pole*	Imax	50 kA	50 kA
Impulse current *max withstand @ 10/350 µs by pole*	Iimp	12.5 kA	8 kA
Specific energy	W/R	40 kJ / Ohm	16 kJ / Ohm
Total lightning current - *@ 10/350µs total*	Itotal	50 kA	32 kA
Withstand on combination waveform *Class III test*	Uoc	6 kV	6 kV
Protection mode		CM/DM*	CM/DM*
Protection level *@ In (8/20µs) and (1,2/50µs)*	Up L/N Up N/PE	1.5 kV 1.5 kV	1.5 kV 1.5 kV
Protection level *@ In*	Up-In	1 kV	1 kV
Admissible short-circuit current	Isccr	50 000 A	50 000 A
Associated disconnectors			
Thermal disconnector		internal	
Existing upstream fuses		Fuses Type gG - 160 A max.	
Mechanical characteristics			
Dimensions		See diagram - 3 TE, EN 43880	
Connection to network		by 40 mm busbar and wire for PE: 10-50 mm²	
Disconnection indicator		1 mechanical indicator by pole, Green/Red	
Failure behavior		Disconnection from the network	
Mounting		40 mm busbar systems	
Operating temperature		-40 °C/+85 °C	
Protection rating		IP20	
Housing material		Thermoplastic UL-94-V0	
Standard			
Certification		EN61643-11, IEC 61643-11	
Compliance		UL1449 ed.4	
Part number			
		64004	64006

DAC50VG Series

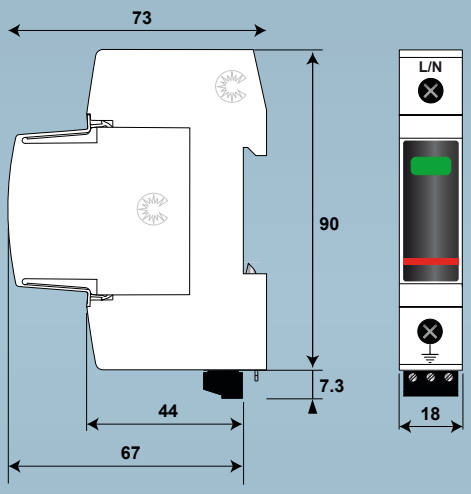
Type 2 + 3 AC Surge Protectors

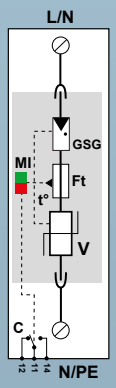
10-year WARRANTY

SINCE 1998 CITEL VG TECHNOLOGY 3RD GENERATION

- **Type 2 + 3 AC surge protectors**
- **VG Technology**
- **In: 20 kA**
- **No leakage current**
- **Optimized to TOV**
- **Remote signaling (option)**
- **IEC 61643-11, EN 61643-11 certified**
- **UL1449 ed.4 compliance**

Mechanical & Electrical diagrams





V : High energy varistor network
GSG : Specific gas Tube
Ft : Thermal fuse
C : Remote signaling contact
t° : Thermal disconnection system
MI : Disconnection indicator

Characteristics

CITEL Model		DAC50VG-10-320	DAC50VG-10-275	DAC50VG-10-150
Description		Type 2 AC surge protector - one-pole - pluggable		
Maximum AC operating voltage	Uc	320 Vac	275 Vac	150 Vac
Temporary Over Voltage (TOV) Characteristic - 5 sec.	UT	335 Vac withstand	335 Vac withstand	180 Vac withstand
Temporary Over Voltage (N/PE TOV) Characteristic -120mn	UT	440 Vac disconnection	440 Vac disconnection	230 Vac disconnection
Residual current *Leakage current at Uc*	Ipe	None	None	None
Follow current	If	None	None	None
Nominal discharge current *5 x 8/20 µs impulses*	In	20 kA	20 kA	20 kA
Maximum discharge current *max. withstand 10/350µs by pole*	Imax	50 kA	50 kA	50 kA
Withstand on combination waveform *- Class III test*	Uoc	6 kV	6 kV	6 kV
Protection level *@ In (8/20µs) and 6 kV(1.2/50µs)*	Up	1.5 kV	1.5 kV	1.5 kV
Residual voltage *@ 5 kA (8/20µs)*	Up-5kA	0.9 kV	0.7 kV	0.4 kV
Admissible short-circuit current	Isccr	50 000 A	50 000 A	50 000 A
Associated disconnectors				
Thermal disconnector		internal		
Fuses		50 A min. - 160 A max. - gG Type		
Existing upstream ground fault breaker (if any)		Type "S" or delayed		
Mechanical characteristics				
Dimensions		see diagram - 1 TE (EN43880)		
Connection to Network		By screw terminals: 2.5-25 mm² (35mm² rigid)		
Failsafe mode		Disconnection from AC network		
Disconnection indicator		1 mechanical indicator Green/Red		
Remote signaling of disconnection output on change over contact		option DAC50VG**S**-10-320	option DAC50VG**S**-10-275	option DAC50VG**S**-10-150
Max. voltage/current for remote signaling		250 V/0.5 A (AC) / 30 V/2 A (DC)		
Wiring for remote signaling		max. 1.5 mm²		
Mounting		Symmetrical rail 35 mm (EN60715)		
Operating temperature		-40/+85°C		
Protection rating		IP20		
Housing material		Thermoplastic UL94-V0		
Spare unit		MDAC50VG-320	MDAC50VG-275	MDAC50VG-150
Standards				
Certification		EN 61643-11 / IEC 61643-11		
Compliance		UL1449 ed.4		
Part number				
		821130311	821130211	821130111

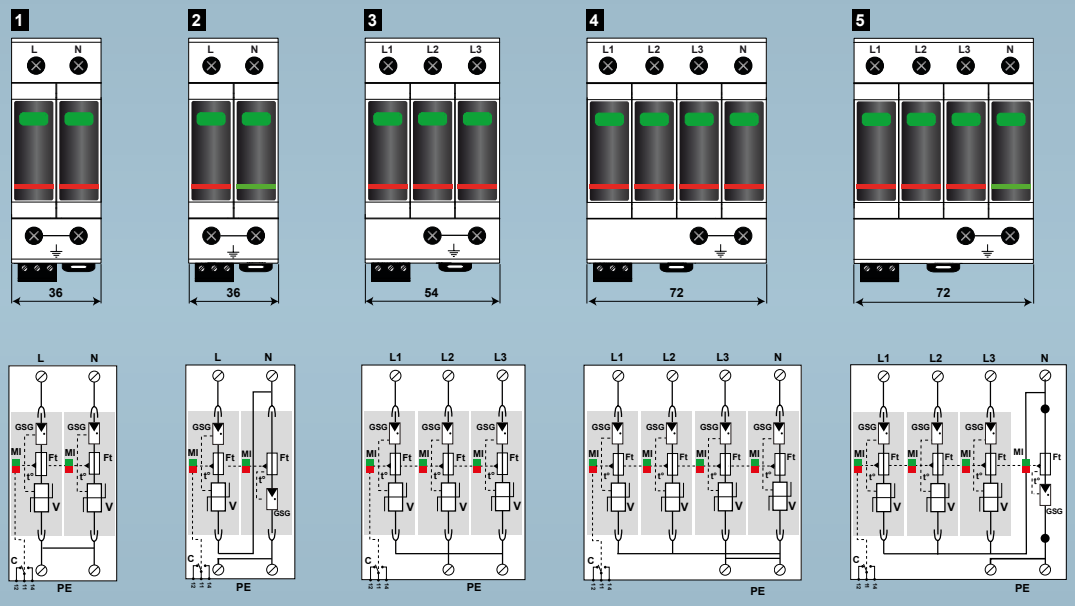
DAC50VG Series

Type 2+3 AC Multipolar Surge Protectors

DAC50VGS-xx-xxx

- Maximum operating voltage
- Configuration: 10 (1+0), 11 (1+1), 20 (2+0), 30 (3+0), 40 (4+0), 31 (3+1)
- «S» Remote signal option
- «VG» VG Technology
- «50» Imax: 50 kA

Mechanical & Electrical diagrams



Characteristics

Model	P/N	Network	AC system	Protection mode	Up L/PE	Up L/N	Up N/PE	Dimension EN43880	Diagram
DAC50VG-31-320	821130334	230/400 V 3-Phase+N	TT-TNS System (3+1)	L/N and N/PE	-	1.5 kV	1.5 kV	4 TE	5
DAC50VG-31-275	821130234	230/400 V 3-Phase+N	TT-TNS System (3+1)	L/N and N/PE	-	1.5 kV	1.5 kV	4 TE	5
DAC50VG-31-150	821130134	120/208 V 3-Phase+N	TT-TNS System (3+1)	L/N and N/PE	-	1.5 kV	1.5 kV	4 TE	5
DAC50VG-40-320	821130314	230/400 V 3-Phase+N	TNS System (4+0)	L/PE and N/PE	1.5 kV		1.5 kV	4 TE	4
DAC50VG-40-275	821130214	230/400 V 3-Phase+N	TNS System (4+0)	L/PE and N/PE	1.5 kV	-	1.5 kV	4 TE	4
DAC50VG-40-150	821130114	120/208 V 3-Phase+N	TNS System (4+0)	L/PE and N/PE	1.5 kV	-	1.5 kV	4 TE	4
DAC50VG-30-320	821130313	230/400 V 3-Phase	TNC System (3+0)	L/PE	1.5 kV	-	-	3 TE	3
DAC50VG-30-275	821130213	230/400 V 3-Phase	TNC System (3+0)	L/PE	1.5 kV	-	-	3 TE	3
DAC50VG-30-150	821130113	120/208 V 3-Phase	TNC System (3+0)	L/PE	1.5 kV	-	-	3 TE	3
DAC50VG-11-320	821130332	230 V Single Phase	TT-TN System (1+1)	L/N and N/PE	-	1.5 kV	1.5 kV	2 TE	2
DAC50VG-11-275	821130232	230 V Single Phase	TT-TN System (1+1)	L/N and N/PE	-	1.5 kV	1.5 kV	2 TE	2
DAC50VG-11-150	821130132	120 V Single Phase	TT-TN System (1+1)	L/N and N/PE	-	1.5 kV	1.5 kV	2 TE	2
DAC50VG-20-320	821130312	230 V Single Phase	TN System (2+0)	L/PE and N/PE	1.5 kV	-	1.5 kV	2 TE	1
DAC50VG-20-275	821130212	230 V Single Phase	TN System (2+0)	L/PE and N/PE	1.5 kV	-	1.5 kV	2 TE	1
DAC50VG-20-150	821130112	120 V Single Phase	TN System (2+0)	L/PE and N/PE	1.5 kV	-	1.5 kV	2 TE	1

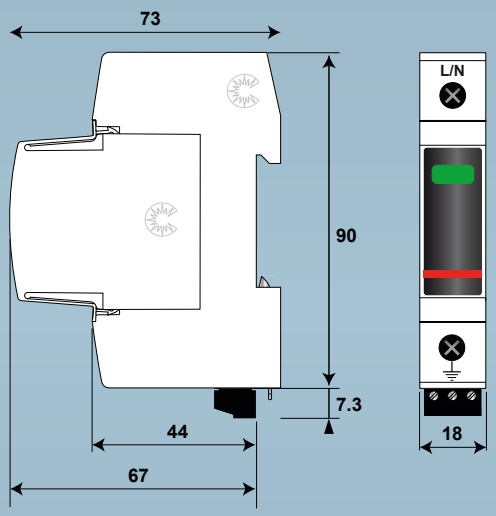
DAC50 Series

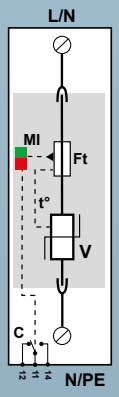
Type 2 AC surge protector

5-year WARRANTY

- **Type 2 AC Surge Protector**
- **In: 20 kA**
- **Imax: 50 kA**
- **Pluggable module for each phase**
- **Remote signaling (option)**
- **IEC 61643-11, EN 61643-11 certified**
- **UL1449 ed.4 compliance**

Mechanical & Electrical diagrams





V : High energy varistor network
Ft : Thermal fuse
C : Remote signaling contact
t° : Thermal disconnection system
MI : Disconnection indicator

Characteristics

CITEL Model		DAC50-10-760	DAC50-10-440	DAC50-10-275	DAC50-10-150
Description		Type 2 AC surge protector - one-pole - pluggable			
Maximum AC operating voltage	Uc	760 Vac	440 Vac	275 Vac	150 Vac
Temporary Over Voltage (TOV) Charasteristics - 5 sec.	UT	1000 Vac withstand	580 Vac withstand	335 Vac withstand	180 Vac withstand
Temporary Over Voltage (TOV) Charasteristics -120mn	UT	1325 Vac disconnection	770 Vac disconnection	440 Vac disconnection	230 Vac disconnection
Residual current - *Leakage current at Uc*	Ipe	< 1 mA	< 1 mA	< 1 mA	< 1 mA
Follow current	If	None	None	None	None
Nominal discharge current *15 x 8/20 µs impulses*	In	20 kA	20 kA	20 kA	20 kA
Max. discharge current *max. withstand @ 8/20 µs by pole*	Imax	50 kA	50 kA	50 kA	50 kA
Protection level *@ In (8/20µs)*	Up	2.9 kV	2 kV	1.25 kV	0.9 kV
Residual voltage *@ 5 kA (8/20µs)*	Up-5kA	2.6 kV	1.5 kV	1 kV	0.6 kV
Admissible short-circuit current	Isccr	50 000 A	50 000 A	50 000 A	50 000 A
Associated disconnectors					
Thermal disconnector		internal			
Fuses		50 A min. - 125 A max. - gG Type			
Installation ground fault breaker (if any)		Type "S" or delayed			
Mechanical characteristics					
Dimensions		see diagram - 1TE (EN43880)			
Connection to Network		By screw terminals: 2.5-25 mm² (35mm² rigide)			
Failsafe mode		Disconnection from network			
Disconnection indicator		1 mechanical indicator Green/Red			
Remote signaling of disconnection output on changeover contact		option DAC50**S**-10-760	option DAC50**S**-10-440	option DAC50**S**-10-275	option DAC50**S**-10-150
Max. voltage/current for remote signaling		250 V/0.5 A (AC) / 30V/2 A (DC)			
Wiring for remote signaling		max. 1.5 mm²			
Mounting		Symmetrical rail 35 mm (EN60715)			
Operating temperature		-40/+85°C			
Protection rating		IP20			
Housing material		Thermoplastic UL94-V0			
Spare unit		MDAC50-760	MDAC50-440	MDAC50-275	MDAC50-150
Standards					
Certification		EN 61643-11 / IEC 61643-11			
Compliance		UL1449 ed.4			
Part number					
		821110711	821110411	821110211	821110111

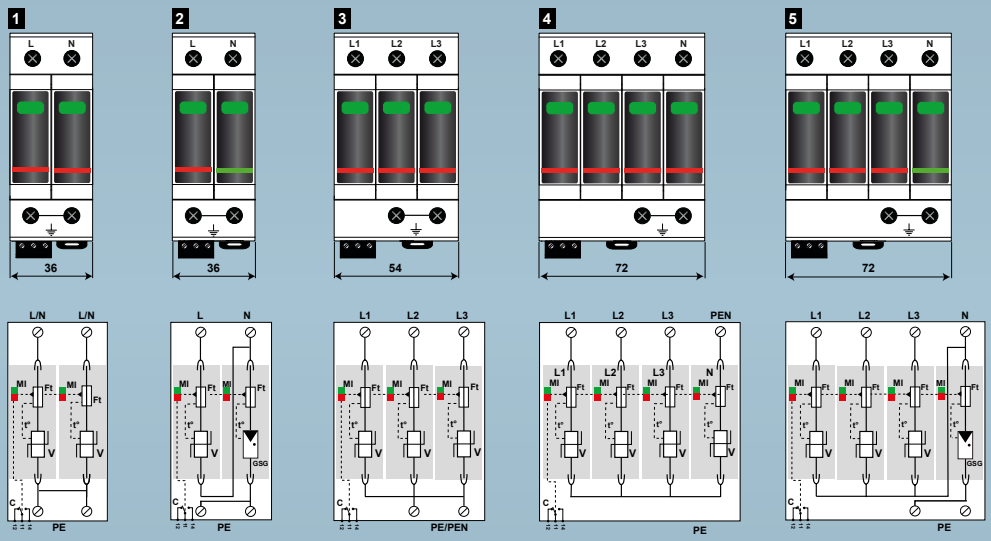
DAC50 Series

Type 2 AC Multipolar Surge Protector

DAC50S-xx-xxx

- Maximum operating voltage
- Configuration: **10** (1+0), **11** (1+1), **20** (2+0), **30** (3+0), **40** (4+0), **31** (3+1)
- «**S**» Remote signal option
- «**50**» Imax: 50 kA

Mechanical & Electrical diagrams



Characteristics

Model	Part number	Network	AC system	Protection Mode	Up L/PE	Up L/N	Up N/PE	Dimensions EN43880	Diagram
DAC50-31-275	821110234	230/400 V 3-phase+N	TT-TNS system (3+1	L/N and N/PE	-	1.25 kV	1.5 kV	4 TE	5
DAC50-31-150	821110134	120/208 V 3-phase+N	TT-TNS system (3+1	L/N and N/PE	-	0.9 kV	1.5 kV	4 TE	5
DAC50-40-440	821110414	230/400 V 3-phase+N	IT system (4+0)	L/PE and N/PE	2 kV	-	2 kV	4 TE	5
DAC50-40-275	821110214	230/400 V 3-phase+N	TNS system (4+0)	L/PE and N/PE	1.25 kV	-	1.25 kV	4 TE	4
DAC50-40-150	821110114	120/208 V 3-phase+N	TNS system (4+0)	L/PE and N/PE	0.9 kV	-	0.9 kV	4 TE	4
DAC50-30-440	821110413	230/400 V 3-phase	IT system (3+0)	L/PE	2 kV	-	-	3 TE	3
DAC50-30-275	821110213	230/400 V 3-phase	TNC system (3+0)	L/PE	1.25 kV	-	-	3 TE	3
DAC50-30-150	821110113	120/208 V 3-phase	TNC system (3+0)	L/PE	0.9 kV	-	-	3 TE	3
DAC50-11-275	821110232	230 V single phase	TT-TN system(1+1)	L/N and N/PE	-	1.25 kV	1.5 kV	2 TE	2
DAC50-11-150	821110132	120 V single phase	TT-TN system(1+1)	L/N and N/PE	-	0.9 kV	1.5 kV	2 TE	2
DAC50-20-440	821110412	230 V single phase	IT system (2+0)	L/PE and N/PE	2 kV	-	2 kV	2 TE	1
DAC50-20-275	821110212	230 V single phase	TN system (2+0)	L/PE and N/PE	1.25 kV	-	1.25 kV	2 TE	1
DAC50-20-150	821110112	120 V single phase	TN system (2+0)	L/PE and N/PE	0.9 kV	-	0.9 kV	2 TE	1

DACF25 Series

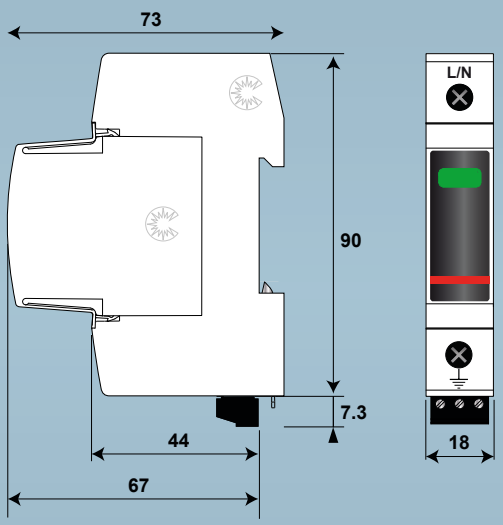
Type 2 AC surge protectors with integrated fuse

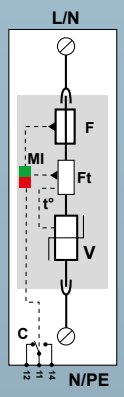
5-year WARRANTY

INTEGRATED FUSE

- **Surge protectors with Integrated Fuse (SPDI)**
- **Not external fuse required**
- **In: 15 kA**
- **Imax: 25 kA**
- **Pluggable module for each phase**
- **Remote signaling (option)**
- **IEC 61643-11, EN 61643-11 certified**
- **UL1449 ed.4 compliance**

Mechanical & Electrical diagrams





V : High energy varistor network
F : Overcurrent protection (fuse)
Ft : Thermal fuse
C : Remote signaling contact
t° : Thermal disconnection system
MI : Disconnection indicator

Characteristics

CITEL Model		DACF25-10-440	DACF25-10-320	DACF25-10-275	DACF25-10-150
Description		Type 2 AC surge protector with integrated fuse - one-pole - pluggable			
Max. AC operating voltage	Uc	440 Vac	320 Vac	275 Vac	150 Vac
Temporary Over Voltage (TOV) Characteristics - 5 sec.	UT	580 Vac withstand	335 Vac withstand	335 Vac withstand	180 Vac withstand
Temporary Over Voltage (TOV) Characteristics -120mn	UT	770 Vac disconnection	440 Vac disconnection	440 Vac disconnection	230 Vac disconnection
Residual current *Leakage current at Uc*	Ipe	< 1 mA	< 1 mA	< 1 mA	< 1 mA
Follow current	If	None	None	None	None
Nominal discharge current *15 x 8/20 µs impulses*	In	15 kA	15 kA	15 kA	15 kA
Max. discharge current *max. withstand @ 8/20 µs by pole*	Imax	25 kA	25 kA	25 kA	25 kA
Protection level *@ In (8/20µs)*	Up	2 kV	1.5 kV	1.25 kV	0.9 kV
Residual voltage *@ 5 kA (8/20µs)*	Up-5kA	1.5 kV	1.2 kV	1 kV	0.6 kV
Admissible short-circuit current	Isccr	100 000 A	100 000 A	100 000 A	100 000 A
Associated disconnectors					
Thermal disconnector		internal			
Fuses		internal (equivalent AC rating : 63 A, gG Type)			
Existing upstream ground fault breaker (if any)		Type "S" or delayed			
Mechanical characteristics					
Dimensions		see diagram, 1 TE (EN43880)			
Connection to Network		By screw terminals: 2.5-25 mm² (35mm² rigid)			
Failsafe mode		Disconnection from network			
Disconnection indicator		1 mechanical indicator Green/Red			
Remote signaling of disconnection output on changeover contact		option DACF25**S**-10-440	option DACF25**S**-10-320	option DACF25**S**-10-275	option DACF25**S**-10-150
Max. voltage/current for remote signaling		250 V/0.5 A (AC) / 30 V/2 A (DC)			
Wiring for remote signaling		max. 1.5 mm²			
Mounting		Symmetrical rail 35 mm (EN60715)			
Operating temperature		-40/+85°C			
Protection rating		IP20			
Housing material		Thermoplastic UL94-V0			
Spare unit		MDACF25-440	MDACF25-320	MDACF25-275	MDACF25-150
Standards					
Certification		IEC 61643-11 / EN 61643-11			
Compliance		UL1449 ed.4			
Part number					
		821410411	821410311	821410211	821410111

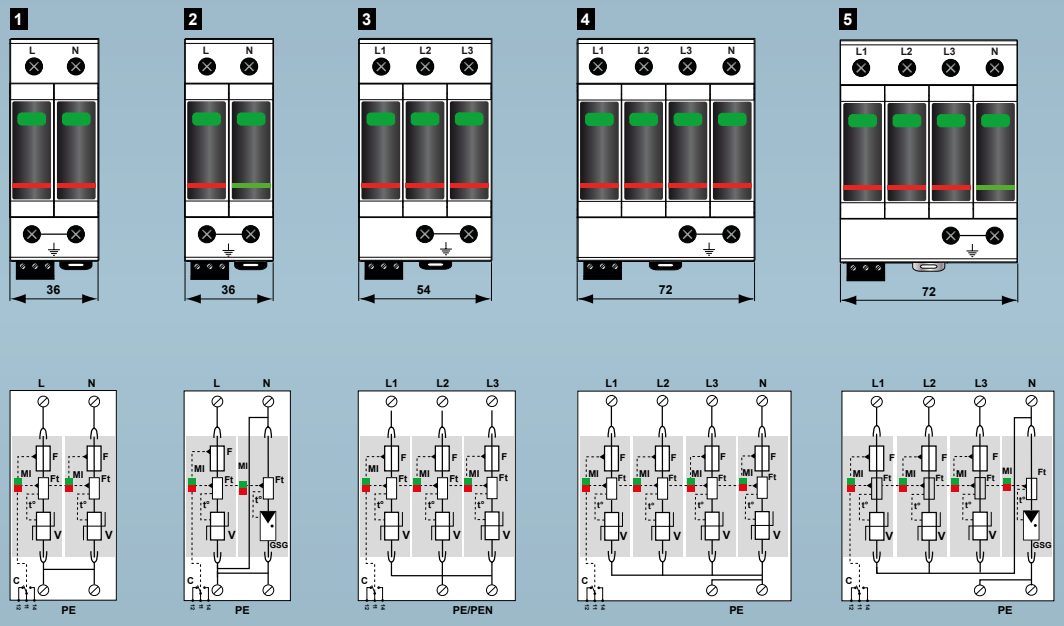
DACF25 Series

Type 2 AC Multipolar surge protectors with integrated fuse

DACF25S-xx-xxx

- Maximum operating voltage
- Configuration: 10 (1+0), 11 (1+1), 20 (2+0), 30 (3+0), 40 (4+0), 31 (3+1)
- «S» Remote signal option
- «25» Imax: 25 kA
- «F» Integrated overcurrent protection (fuse)

Mechanical & Electrical diagrams



Characteristics

Model	P/N	Network	AC system	Protection mode	Up L/PE	Up L/N	Up N/PE	Dimension EN43880	Diagram
DACF25-31-320	821410334	230/400 V 3-Phase+N	TT-TNS System (3+1)	L/N and N/PE	-	1.5 kV	1.5 kV	4 TE	5
DACF25-31-275	821410234	230/400 V 3-Phase+N	TT-TNS System (3+1)	L/N and N/PE	-	1.25 kV	1.5 kV	4 TE	5
DACF25-31-150	821410134	120/208 V 3-Phase+N	TT-TNS System (3+1)	L/N and N/PE	-	0.9 kV	1.5 kV	4 TE	5
DACF25-40-440	821410414	230/400 V 3-Phase+N	IT System (4+0)	L/PE and N/PE	2 kV	-	2 kV	4 TE	4
DACF25-40-320	821410314	230/400 V 3-Phase+N	TNS System (4+0)	L/PE and N/PE	1.5 kV	-	1.5 kV	4 TE	4
DACF25-40-275	821410214	230/400 V 3-Phase+N	TNS System (4+0)	L/PE and N/PE	1.25 kV	-	1.25 kV	4 TE	4
DACF25-40-150	821410114	120/208 V 3-Phase+N	TNS System (4+0)	L/PE and N/PE	0.9 kV	-	0.9 kV	4 TE	4
DACF25-30-440	821410413	230/400 V 3-Phase	IT System (3+0)	L/PE	2 kV	-	-	3 TE	3
DACF25-30-320	821410313	230/400 V 3-Phase	TNC System (3+0)	L/PE	1.5 kV	-	-	3 TE	3
DACF25-30-275	821410213	230/400 V 3-Phase	TNC System (3+0)	L/PE	1.25 kV	-	-	3 TE	3
DACF25-30-150	821410113	120/208 V 3-Phase	TNC System (3+0)	L/PE	0.9 kV	-	-	3 TE	3
DACF25-11-320	821410332	230 V Single Phase	TT-TN System (1+1)	L/N and N/PE	-	1.5 kV	1.5 kV	2 TE	2
DACF25-11-275	821410232	230 V Single Phase	TT-TN System (1+1)	L/N and N/PE	-	1.25 kV	1.5 kV	2 TE	2
DACF25-11-150	821410132	120 V Single Phase	TT-TN System (1+1)	L/N and N/PE	-	0.9 kV	1.5 kV	2 TE	2
DACF25-20-440	821410412	230 V Single Phase	IT System (2+0)	L/PE and N/PE	2 kV	-	2 kV	2 TE	1
DACF25-20-320	821410312	230 V Single Phase	TN System (2+0)	L/PE and N/PE	1.5 kV	-	1.5 kV	2 TE	1
DACF25-20-275	821410212	230 V Single Phase	TN System (2+0)	L/PE and N/PE	1.25 kV	-	1.25 kV	2 TE	1
DACF25-20-150	821410112	120 V Single Phase	TN System (2+0)	L/PE and N/PE	0.9 kV	-	0.9 kV	2 TE	1

DAC40C Series

Compact 1-phase Type 2 Surge Protector

5-year WARRANTY

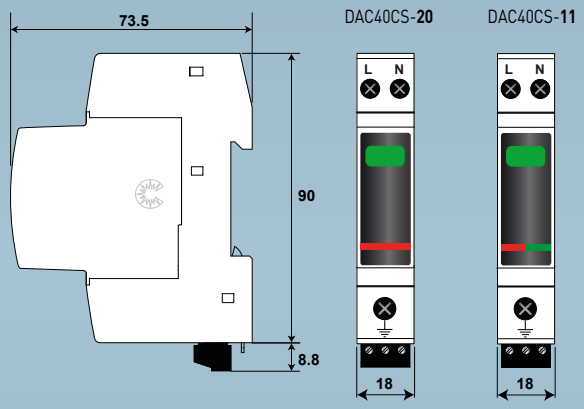
COMPACT VERSION

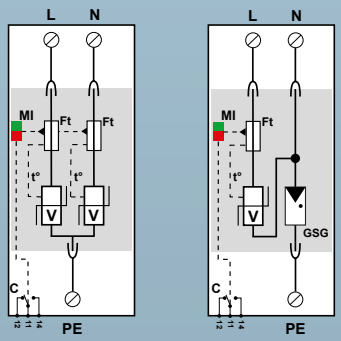
DAC40CS-xx-xxx

- «40» Imax: 40 kA
- «S» Remote signal option
- Configuration: 11 (1+1), 20 (2+0)
- Maximum operating voltage

- **Common/Differential mode**
- **Pluggable module**
- **IEC 61643-11, EN 61643-11, UL1449 ed.4 compliance**

Mechanical & Electrical diagrams





V : High energy varistor network
GSG : Specific Gas Tube
Ft : Thermal fuse
C : Remote signaling contact
t° : Thermal disconnection system
MI : Disconnection indicator

Characteristics

CITEL Model		DAC40C-20-440	DAC40C-11-275	DAC40C-11-150
Description		Compact 1-phase Type 2 surge protector - Pluggable		
Network		230 V single-phase		120 V single-phase
Connection mode		L/PE and N/PE	L/N and N/PE	L/N and N/PE
Max. AC operating voltage	Uc	440 Vac	275 Vac	150 Vac
Temporary Over Voltage (TOV) Charasteristic - *5 sec.*	UT	580 Vac withstand	335 Vac withstand	180 Vac withstand
Temporary Over Voltage (TOV) Charasteristic - *120mn*	UT	770 Vac disconnection	440 Vac disconnection	230 Vac disconnection
Temporary Over Voltage N/PE (TOV HT)	UT	-	1200 V/300A/200 ms withstand	1200 V/300A/200 ms withstand
Residual current - *Leakage current at Uc*	Ipe	< 1 mA	None	None
Follow current	If	None	None	None
Nominal discharge current *15 x 8/20 µs impulses*	In	20 kA	20 kA	20 kA
Max. discharge current *max. withstand @ 8/20 µs by pole*	Imax	40 kA	40 kA	40 kA
Total discharge current - *@8/20µs*	Itotal	80 kA	40 kA	40 kA
Protection level @In *(8/20µs)*	Up L/N Up N/PE Up L/PE	- 1.8 kV 1.8 kV	1.25 kV 1.5 kV -	0.9 kV 1.5 kV -
Admissible short-circuit current	Isccr	10 000 A	10 000 A	10 000 A
Associated disconnectors				
Thermal disconnector		internal		
Fuses		50 A min. - 125 A max. - Type gG		
Existing upstream ground fault breaker (if any)		Type "S" or delayed		
Mechanical characteristics				
Dimensions		see diagram, 1TE (EN43880)		
Connection to Network		by screw terminals: L/n =1.5-10mm² (16 mm²) / PE = 2.5-25mm² (35 mm² rigid)		
Failsafe mode		Disconnection from network		
Disconnection indicator		1 mechanical indicator Green/Red		
Remote signaling of disconnection output on changeover contact		Option DAC40C**S**-20-440	Option DAC40C**S**-11-275	Option DAC40C**S**-11-150
Max. voltage/current for remote signaling		250 V/0.5 A (AC) / 30 V/2 A (DC)		
Wiring for remote signaling		Max. 1.5 mm²		
Mounting		Symmetrical rail 35 mm (EN60715)		
Operating temperature		-40/+85°C		
Protection rating		IP20		
Housing material		Thermoplastic UL94-V0		
Spare unit		MDAC40C-20-440	MDAC40C-11-275	MDAC40C-11-150
Standards				
Compliance		IEC 61643-11 / EN 61643-11 / UL1449 ed.4		
Part number				
		821510411	821520211	821520111

DAC40C Series

Compact 3-phase Type 2 Surge Protector

5-year WARRANTY

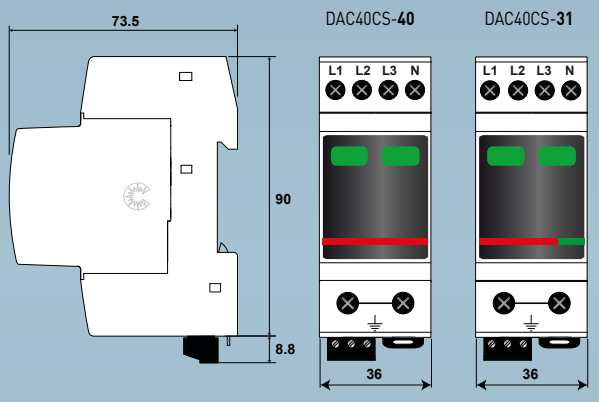
COMPACT VERSION

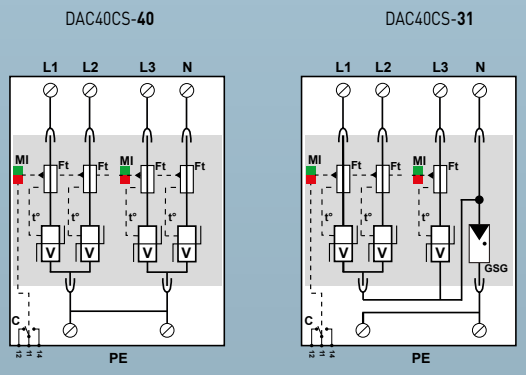
DAC40CS-xx-xxx

- Maximum operating voltage
- Configuration: 40 (4+0), 31 (3+1)
- «S» Remote signal option
- «40» Imax: 40 kA

- **Common/Differential mode**
- **Pluggable module**
- **IEC 61643-11, EN 61643-11, UL1449 ed.4 compliance**

Mechanical & Electrical diagrams





V : High energy varistor network
GSG : Specific Gas Tube
Ft : Thermal fuse
C : Remote signaling contact
t° : Thermal disconnection system
MI : Disconnection indicator

Characteristics

CITEL Model		DAC40C-40-440	DAC40C-31-275	DAC40C-31-150
Description		Compact 3-phase+N Type 2 surge protector - Pluggable		
Network		230/400 V 3-phase	230/400 V 3-phase	120/208 V 3-phase
Connection mode		L/PE and N/PE	L/N and N/PE	L/N and N/PE
Max. AC operating voltage	Uc	440 Vac	275 Vac	150 Vac
Temporary Over Voltage (TOV) Charasteristic - *5 sec.*	UT	580 Vac withstand	335 Vac withstand	180 Vac withstand
Temporary Over Voltage (TOV) Charasteristic - *120mn*	UT	770 Vac disconnection	440 Vac disconnection	230 Vac disconnection
Temporary Over Voltage N/PE (TOV HT)	UT	-	1200 V/300A/200 ms withstand	1200 V/300A/200 ms withstand
Residual current - *Leakage current at Uc*	Ipe	< 1 mA	None	None
Follow current	If	None	None	None
Nominal discharge current *15 x 8/20 µs impulses*	In	20 kA	20 kA	20 kA
Max. discharge current *max. withstand @ 8/20 µs by pole*	Imax	40 kA	40 kA	40 kA
Total discharge current *@8/20µs*	Itotal	160 kA	40 kA	40 kA
Protection level @In *(8/20µs)*	Up L/N Up N/PE Up L/PE	- 1.8 kV 1.8 kV	1.25 kV 1.5 kV -	0.9 kV 1.5 kV -
Admissible short-circuit current	Isccr	10000 A	10000 A	10000 A
Associated disconnectors				
Thermal disconnector		internal		
Fuses		50 A min. - 125 A max. - Type gG		
Existing upstream ground fault breaker (if any)		Type "S" or delayed		
Mechanical characteristics				
Dimensions		see diagram, 2 TE (EN43880)		
Connection to Network		by screw terminals: L/N = 1.5-10mm² (16 mm²) or PE = 2.5-25mm² (35 mm² rigid)		
Failsafe mode		Disconnection from network		
Disconnection indicator		2 mechanical indicators, Green/Red		
Remote signaling of disconnection output on changeover contact		Option DAC40CS-40-440	Option DAC40CS-31-275	Option DAC40CS-31-150
Max. voltage/current for remote signaling		250 V/0.5 A (AC) / 30 V/2 A (DC)		
Wiring for remote signaling		Max. 1.5 mm²		
Mounting		Symmetrical rail 35 mm (EN60715)		
Operating temperature		-40/+85°C		
Protection rating		IP20		
Housing material		Thermoplastic UL94-V0		
Spare unit		MDAC40C-40-440	MDAC40C-31-275	MDAC40C-31-150
Standards				
Compliance		IEC 61643-11 / EN 61643-11 / UL1449 ed.4		
Part number				
		821510412	821520212	821520112

DAC15C Series

Compact 1-phase Type 2 (or 3) Surge Protector

5-year WARRANTY

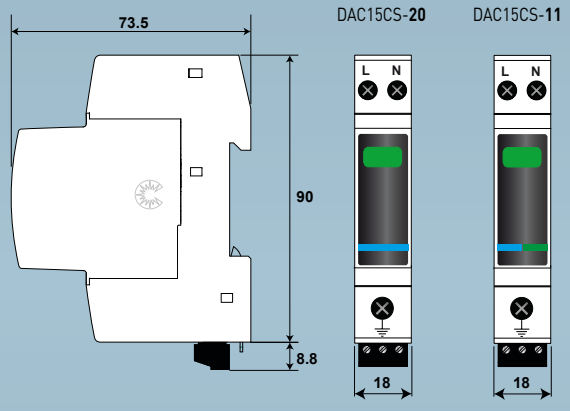
COMPACT VERSION

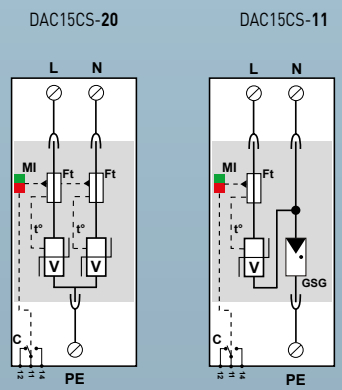
DAC15CS-xx-xxx

- «15» Imax: 15 kA
- «S» Remote signal option
- Configuration: 11 (1+1), 20 (2+0)
- Maximum operating voltage

- **Common/Differential mode**
- **Pluggable module**
- **IEC 61643-11, EN 61643-11, UL1449 ed.4 compliance**

Mechanical & Electrical diagrams





V : High energy varistor network
GSG : Specific Gas Tube
Ft : Thermal fuse
C : Remote signaling contact
t° : Thermal disconnection system
MI : Disconnection indicator

Characteristics

CITEL Model		DAC15C-20-440	DAC15C-11-275	DAC15C-11-150
Description		Compact 1-phaseType 2 surge protector - Pluggable		
Network		230/400 V single-phase	230/400 V single-phase	120/208 V single-phase
Connection mode		L/PE and N/PE	L/N and N/PE	L/N and N/PE
Max. AC operating voltage	Uc	440 Vac	275 Vac	150 Vac
Temporary Over Voltage (TOV) Charasteristic 5 sec.	UT	580 Vac withstand	335 Vac withstand	180 Vac withstand
Temporary Over Voltage (TOV) Charasteristic 120 mn	UT	770 Vac disconnection	440 Vac disconnection	230 Vac disconnection
Temporary Over Voltage N/PE (TOV HT)	UT	-	1200 V/300A/200 ms withstand	1200 V/300A/200 ms withstand
Residual current - *Leakage current at Uc*	Ipe	< 1 mA	None	None
Follow current	If	None	None	None
Nominal discharge current *15 x 8/20 µs impulses*	In	5 kA	5 kA	5 kA
Max. discharge current *max. withstand @ 8/20 µs by pole*	Imax	15 kA	15 kA	15 kA
Total discharge current *@ 8/20µs*	Itotal	30 kA	30 kA	30 kA
Withstand on combinaison waveform *- Class III test*	Uoc	10 kV	10 kV	10 kV
Protection level *@ In (8/20µs)*	Up L/N Up N/PE Up L/PE	- 1.3 kV 1.3 kV	1 kV 1.5 kV -	0.6 kV 1.5 kV -
Admissible short-circuit current	Isccr	10000 A	10000 A	10000 A
Associated disconnectors				
Thermal disconnector		internal		
Fuses		20 A min - 125 A max. - Type gG		
Existing upstream ground fault breaker (if any)		Type "S" or delayed		
Mechanical characteristics				
Dimensions		see diagram, 1 TE (EN43880)		
Connection to Network		by screw terminals: L/N = 1.5-10 mm² (16mm²) or PE = 2.5-25 mm² (35 mm² rigid)		
Failsafe mode		Disconnection from network		
Disconnection indicator		1 mechanical indicators, Green/Red		
Remote signaling of disconnection output on changeover contact		Option DAC15C**S**-20-400	Option DAC15C**S**-11-275	Option DAC15C**S**-11-150
Max. voltage/current for remote signaling		250 V/0.5 A (AC) / 30 V/2 A (DC)		
Wiring for remote signaling		Max. 1.5 mm²		
Mounting		Symmetrical rail 35 mm (EN60715)		
Operating temperature		-40/+85°C		
Protection rating		IP20		
Housing material		Thermoplastic UL94-V0		
Spare unit		MDAC15C-20-440	MDAC15C-11-275	MDAC15C-11-150
Standards				
Compliance		IEC 61643-11 / EN 61643-11 / UL1449 ed.4		
Part number				
		821610411	821620211	821620111

DAC15C Series

Compact 3-phase Type 2 (or 3) Surge Protector

5-year WARRANTY

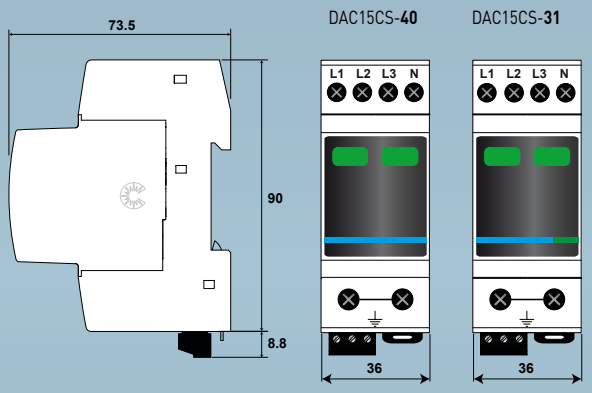
COMPACT VERSION

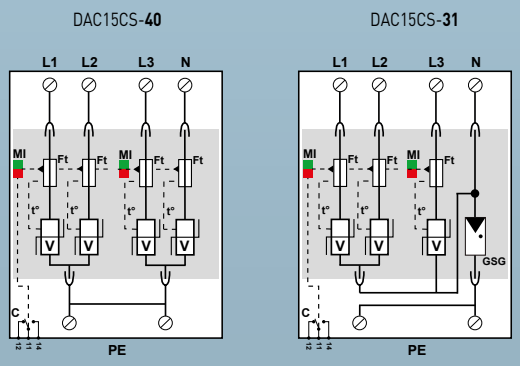
DAC15CS-xx-xxx

- «15» Imax: 15 kA
- «S» Remote signal option
- Configuration: 40 (4+0), 31 (3+1)
- Maximum operating voltage

- **Common/Differential mode**
- **Pluggable module**
- **IEC 61643-11, EN 61643-11 and UL1449 ed.4 compliance**

Mechanical & Electrical diagrams





V : High energy varistor network
GSG : Specific Gas Tube
Ft : Thermal fuse
C : Remote signaling contact
t° : Thermal disconnection system
MI : Disconnection indicator

Characteristics

CITEL Model		DAC15C-40-440	DAC15C-31-275	DAC15C-31-150
Description		Compact 3-phase+N Type 2 surge protector - Pluggable		
Network		230/400 V 3-phase	230/400 V 3-phase	120/208 V 3-phase
Connection mode		L/PE and N/PE	L/N and N/PE	L/N and N/PE
Max. AC operating voltage	Uc	440 Vac	275 Vac	150 Vac
Temporary Over Voltage (TOV) Charasteristic - *5 sec.*	UT	580 Vac withstand	335 Vac withstand	180 Vac withstand
Temporary Over Voltage (TOV) Charasteristic *-120 mn*	UT	770 Vac disconnection	440 Vac disconnection	230 Vac disconnection
Temporary Over Voltage N/PE (TOV HT)	UT	-	1200 V/300A/200 ms withstand	1200 V/300A/200 ms withstand
Residual current - *Leakage current at Uc*	Ipe	< 1 mA	None	None
Follow current	If	None	None	None
Nominal discharge current *15 x 8/20 µs impulses*	In	5 kA	5 kA	5 kA
Max. discharge current *max. withstand @ 8/20 µs by pole*	Imax	15 kA	15 kA	15 kA
Total discharge current - *@ 8/20 µs*	Itotal	60 kA	40 kA	40 kA
Withstand on combinaison waveform - *Class III test*	Uoc	10 kV	10 kV	10 kV
Protection level *@ In (8/20µs)*	Up L/N Up N/PE Up L/PE	- 1.3 kV 1.3 kV	0.9 kV 1.5 kV -	0.6 kV 1.5 kV -
Admissible short-circuit current	Isccr	10000 A	10000 A	10000 A
Associated disconnectors				
Thermal disconnector		internal		
Fuses		20 A min. - 125 A max. - Type gG		
Existing upstream ground fault breaker (if any)		Type "S" or delayed		
Mechanical characteristics				
Dimensions		see diagram, 2 TE (EN43880)		
Connection to Network		by screw terminals: L/N: 1.5-10mm² (16mm²) or PE: 2.5-25mm² (35mm² rigid)		
Failsafe mode		Disconnection from network		
Disconnection indicator		2 mechanical indicators, Green/Red		
Remote signaling of disconnection output on changeover contact		Option DAC15C**S**-40-400	Option DAC15C**S**-31-275	Option DAC15C**S**-31-150
Max. voltage/current for remote signaling		250 V/0.5 A (AC) / 30 V/2 A (DC)		
Wiring for remote signaling		Max. 1.5 mm²		
Mounting		Symmetrical rail 35 mm (EN60715)		
Operating temperature		-40/+85°C		
Protection rating		IP20		
Housing material		Thermoplastic UL94-V0		
Spare unit		MDAC15C-40-440	MDAC15C-31-275	MDAC15C-31-150
Standards				
Compliance		IEC 61643-11 / EN 61643-11 / UL1449 ed.4		
Part number				
		821610412	821620212	821620112

DC Power Surge Protectors

Type 1 and Type 2
DDC series

- Type 1+2 or Type 2 pluggable surge protectors designed for equipment connected to DC powerlines.
- One or Two-pole unit
- Technology based on high energy varistor equipped with thermal disconnection mechanism.
- Remote disconnection signaling feature (option)
- prIEC61643-41 compliance (forthcoming standard for DC power SPD)

Type 2 compact
DDxxCC series

- Type 2 pluggable surge protectors designed for equipment connected to DC powerlines.
- Compact design to fit inside small cabinets
- Remote disconnection signaling feature (option)
- prIEC61643-41 compliance (forthcoming standard for DC power SPD)
- Available for DC powerline from 12 to 350 Vdc.

DDC Series

Type 1 and Type 2 DC power Surge Protectors

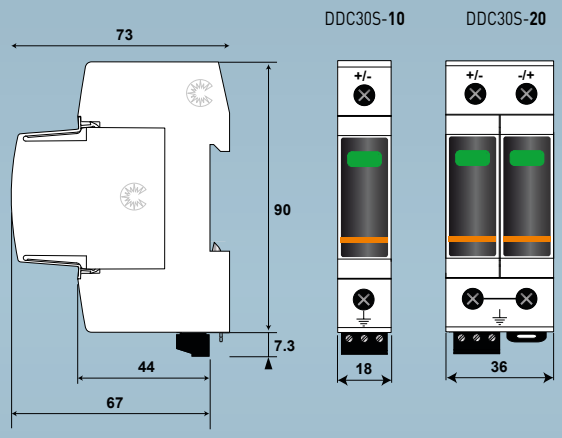
5-year WARRANTY

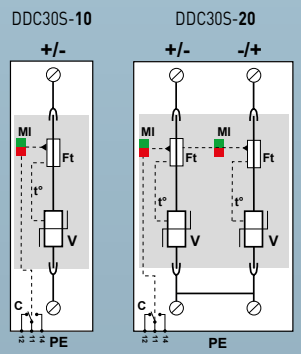
DDC30S-x0-xx

- Maximum DC operating voltage
- Number of protected pole : 1 or 2
- «S» Remote signal option
- «30» Imax: 30 kA

- **For 48 Vdc and 75 Vdc**
- **Pluggable module**
- **Remote signaling (option)**
- **prIEC 61643-41 compliance**

Mechanical & Electrical diagrams





V : High energy varistor network
Ft : Thermal fuse
C : Remote signaling contact
t° : Thermal disconnection system
MI : Disconnection indicator

Characteristics

CITEL Model		DDC30-10-65	DDC30-10-85	DDC30-20-65	DDC30-20-85
Description		1-pole DC surge protector		2-pole DC surge protector	
Nominal DC voltage	Un	48 Vdc	75 Vdc	48 Vdc	75 Vdc
Connection mode		+/PE and -/PE	+/PE and -/PE	+/PE and -/PE	+/PE and -/PE
Max. DC operating voltage	Uc-DC	65 Vdc	85 Vdc	65 Vdc	85 Vdc
Max. AC operating voltage	Uc-AC	50 Vac	60 Vac	50 Vac	60 Vac
Residual current *Leakage current at Uc*	Ipe	< 0.1 mA	< 0.1 mA	< 0.1 mA	< 0.1 mA
Follow current	If	None	None	None	None
Nominal discharge current *15 x 8/20 µs impulses*	In	15 kA	15 kA	15 kA	15 kA
Max. discharge current *max. withstand @ 8/20 µs by pole*	Imax	30 kA	30 kA	30 kA	30 kA
Total discharge current *@ 8/20µs*	Imax total	60 kA	60 kA	60 kA	60 kA
Max. lightning current by pole *max. withstand @ 10/350µs*	Iimp	4 kA	4 kA	4 kA	4 kA
Protection level *@ In (8/20µs) +/PE (-/PE)*	Up Up	300 V -	390 V -	300 V 600 V	390 V 780 V
Admissible short circuit current	Isccr	50 000 A	50 000 A	50 000 A	50 000 A
Associated disconnectors					
Thermal disconnector		internal			
Fuses (if requested)		50 A min. - 125 A max. -Fuses type gG			
Mechanical characteristics					
Dimensions		see diagram - 1 TE (EN43880)		see diagram - 2 TE (EN43880)	
Connection to Network		Screw terminals: 2.5-25 mm² +/- : 1.5-10 mm²			
Failsafe mode		Disconnection from network			
Disconnection indicator		1 mechanical indicator Green/Red		2 mechancial indicators, Green/Red	
Remote signaling of disconnection output on changeover contact		option DDC30**S**-10-65	option DDC30**S**-10-85	option DDC30**S**-20-65	option DDC30**S**-20-85
Max. voltage/current for remote signaling		250 V/0.5 A (AC) / 30 V/2 A (DC)			
Wiring for remote signaling		Max. 1.5 mm²			
Mounting		Symmetrical rail 35 mm (EN60715)			
Operating temperature		-40/+85°C			
Protection rating		IP20			
Housing material		Thermoplastic UL94-V0			
Spare unit		MDDC30-65	MDDC30-85	MDDC30-65	MDDC30-85
Standards					
Compliance		prIEC 61643-41			
Part number					

DDCC Series

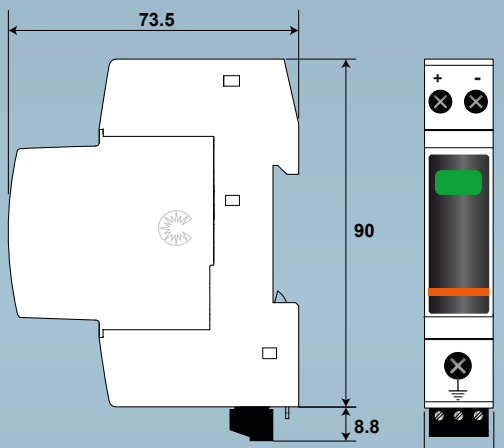
Type 2 Compact DC power Surge Protectors

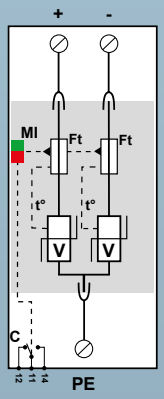
5-year WARRANTY

COMPACT VERSION

- Type 2 DC power surge protectors
- From 12 to 350 Vdc DC network
- Imax: 20, 30 and 40 kA
- Compact Design
- Pluggable module
- Remote signaling option
- prIEC 61643-41 compliance
- IEC 61643-31 compliance

Mechanical & Electrical diagrams

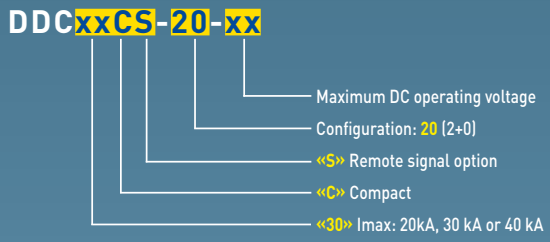




V : High energy varistor network
Ft : Thermal fuse
C : Remote signaling contact
t° : Thermal disconnection system
MI : Disconnection indicator

Characteristics

CITEL Model		DDC20C-20-24	DDC20C-20-38	DDC30C-20-65
Network		12Vdc	24Vdc	48 Vdc
Connection mode		+/-/PE	+/-/PE	+/-/PE
Max. DC operating voltage	Uc	24 Vdc	38 Vdc	65 Vdc
Max. AC operating voltage	Uc	20 Vac	30 Vac	50 Vac
Nominal voltage PV-DC	Uocstc	12 Vdc	24 Vdc	48 Vdc
Max. operating voltage PV-DC	Ucpv	24 Vdc	38 Vdc	65 Vdc
Permanent operating current *@ Ucpv*	Icpv	< 0.1 mA	< 0.1 mA	< 0.1 mA
Residual current *Leakage current at Uc*	Ipe	< 0.1 mA	< 0.1 mA	< 0.1 mA
Follow current	If	None	None	None
Nominal discharge current *15 x 8/20 µs impulses*	In	10 kA	10 kA	15 kA
Max. discharge current *max. withstand @ 8/20 µs by pole*	Imax	20 kA	20 kA	30 kA
Total discharge current *@ 8/20µs*	Itotal	40 kA	40 kA	60 kA
Protection level @ In *+/PE (-/PE)*	Up	250 V	250 V	300 V
Admissible short circuit current	Isccr	10 000 A	10 000 A	10 000 A
Current withstand short circuit PV	Iscpv	1000 A	1000 A	1000 A
Associated disconnectors				
Thermal disconnector		internal		
Fuses (if required)		20 A min - 125 A max - Type gG		50 A min. - 125 A max. - Type gG
Mechanical characteristics				
Dimensions		see diagram, 1 TE (EN43880)		
Connection to Network		by screw terminals: 1.5-10mm² (actives wires) and 2.5-25mm² (ground)		
Disconnection indicator		1 mechanical indicator, Green/Red		
Failure mode		Disconnection from network		
Remote signaling of disconnection output on changeover contact		Option DDC20CS-20-24	Option DDC20CS-20-38	Option DDC30CS-20-65
Max. voltage/current for remote signaling		250 V/0.5 A (AC) / 30 V/2 A (DC)		
Wiring for remote signaling		Max. 1.5 mm²		
Mounting		Symmetrical rail 35 mm (EN60715)		
Operating temperature		-40/+85°C		
Protection rating		IP20		
Housing material		Thermoplastic UL94-V0		
Spare unit		MDDC20C-20-24	MDDC20C-20-38	MDDC30C-20-65
Standards				
Compliance		IEC 61643-11 / EN 61643-11 / UL1449 ed.4		
Part number				
		-	-	-



DDC40C-20-100	DDC40C-20-125	DDC40C-20-150	DDC40C-20-180	DDC40C-20-275	DDC40C-20-350	DDC40C-20-460
75 Vdc	95 Vdc	110 Vdc	130 Vdc	220 Vdc	280 Vdc	350 Vdc
+/-/PE	+/-/PE	+/-/PE	+/-/PE	+/-/PE	+/-/PE	+/-/PE
100 Vdc	125 Vdc	150 Vdc	180 Vdc	275 Vdc	350 Vdc	460 Vdc
75 Vac	95 Vac	115 Vac	150 Vac	210 Vac	275 Vac	350 Vac
75 Vdc	95 Vdc	110 Vdc	130 Vdc	220 Vdc	280 Vdc	350 Vdc
100 Vdc	125 Vdc	150 Vdc	180 Vdc	275 Vdc	350 Vdc	460 Vdc
< 0.1 mA	< 0.1 mA	< 0.1 mA	< 0.1 mA	< 0.1 mA	< 0.1 mA	< 0.1 mA
< 0.1 mA	< 0.1 mA	< 0.1 mA	< 0.1 mA	< 0.1 mA	< 0.1 mA	< 0.1 mA
None	None	None	None	None	None	None
20 kA	20 kA	20 kA	20 kA	20 kA	20 kA	20 kA
40 kA	40 kA	40 kA	40 kA	40 kA	40 kA	40 kA
80 kA	80 kA	80 kA	80 kA	80 kA	80 kA	80 kA
390 V	450 V	500 V	620 V	900 V	1200 V	1400 V
10 000 A	10 000 A	10 000 A	10 000 A	10 000 A	10 000 A	10 000 A
1000 A	1000 A	1000 A	1000 A	1000 A	1000 A	1000 A
50 A min. - 125 A max. - Type gG						
Option DDC40CS-20-100	Option DDC40CS-20-125	Option DDC40CS-20-150	Option DDC40CS-20-180	Option DDC40CS-20-275	Option DDC40CS-20-350	Option DDC40CS-20-460
MDDC40C-20-100	MDDC40C-20-125	MDDC40C-20-150	MDDC40C-20-180	MDDC40C-20-275	MDDC40C-20-350	MDDC40C-20-460
-	-	-	-	-	-	-

SELECTION OF SPD FOR

Following
IEC 60364-4-443 and
IEC 60364-5-534

Installation
with LPS

LPL I or II

LPL III or IV

OR

Installation
without LPS

Reinforced

Standard

Selection of SPDs in re

Installation in the main distribution panel (3-Phas

DS254VG-300/G

- 3-Phase + N
- TN or TT systems
- Type 1+2+3
- Iimp 25 kA/pole
- VG-Technology

DS2

DAC1-13VGS-31-275

- 3-Phase + N
- TN or TT systems
- Type 1+2+3
- Iimp 12.5 kA/pole
- VG-Technology
- Pluggable

DAC1

DAC50VGS-31-275

- 3-Phase + N
- TN or TT systems
- Type 2+3
- Imax 50 kA
- VG-Technology
- Pluggable

DAC50S-31-275

- 3-Phase + N
- TN or TT systems
- Type 2
- Imax 50 kA
- Pluggable

DAC

DAC40CS-31-275

- Compact SPD
- 3-Phase + N
- TN or TT systems
- Type 2
- Imax 40 kA
- Pluggable

*** DAC4**

AC POWERLINE

lation with their location and the international standard

se 230/400 Vac)

53VG-400

- 3-Phase
- IT systems
- Type 1+2+3
- Iimp 25 kA/pole
- VG-Technology

-13S-30-440

- 3-Phase
- IT systems
- Type 1+2
- Iimp 12.5 kA/pole
- Pluggable

50S-30-440

- 3-Phase
- IT systems
- Type 2
- Imax 50 kA
- Pluggable

0CS-40-440

- Compact SPD
- 3-Phase
- IT systems
- Type 2
- Imax 40 kA
- Pluggable

No additional SPD required

NO

Sentitive equip-ment >10 m from the primary SPD

YES

Installation in AC Sub-Panel

VG TECHNOLOGY

In case of VG SPD used at the entrance, additional SPDs can be installed without cable length separation (Zero-meter Coordination)

Installation in AC Sub-Panel

DAC15CS-11-275 or DAC15CS-31-275

- Compact SPDs
- Type 2 or 3
- 3 or Single Phase
- Pluggable

Installation inside or close to equipement

MSB6-400

- ultra-compact SPD
- Single Phase
- Type 3
- Wire connection
- Parallel mounting

MLPC1-230L-V

- Ultra-compact SPD
- Single Phase
- Type 2 or 3
- Screw or spring connection
- Parallel mounting

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