CITEL

SURGE PROTECTORS
FOR
Data Center

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EFFICIENT SURGE PROTECTION OF YOUR DATA CENTER INSTALLATIONS

A professional approach to lightning and surge protection will guarantee your data center a long life

DATA CENTER NEED FOR SURGE PROTECTION

In today's digital-driven world, data centers are the backbone of countless industries, from finance to healthcare, and from e-commerce to entertainment. **Their uninterrupted operation is critical to maintaining the seamless flow of data and services that businesses and individuals rely on daily.**

A momentary power disruption can lead to downtime, data loss, and even more significant financial and reputational damage. As such, the need for reliable power in data centers is more than just a technical requirement - a cornerstone of modern infrastructure, ensuring resilience, efficiency, and trust in an increasingly connected world.

Surge protection plays a critical role in the reliability of this modern digital infrastructure.

Data center outages can occur due to a variety of reasons, many of which highlight the complex and interdependent systems within these facilities. Power related issues as well as cooling issues comprise approximately 71% of all data center related outages.

Citel offers an extensive selection of Surge Protective Devices (SPDs) following international standards dedicated to SPDs to provide a complete protection solution against overvoltages for data centers.

Our lineup includes heavy-duty service entrance SPDs, specialized **SPDs for switchboards, PDUs, VFDs, solar systems, DC battery storage, and data lines.** Whatever the system within a data center that needs safeguarding, Citel has the right protection in place!

Note: for all products shown, other voltages, configurations and UL certified products are available. For more information, please contact us

AC SURGE PROTECTION FOR POWER SUPPLY

DACN1-25CVGS-31-275/SC

DAC1-13VGS-31-275

DACN1-25CVGS
DAC1-13VGS

Type 1+2+3 Surge Protectors for AC power supply with high discharge capacity IEC 61643-11 certified

FOR SERVICE ENTRANCE SWITCHGEARS

CITEL model	DAC1-13VGS-30-275	DAC1-13VGS-31-275	DACN1-25VGS-31-275	DACN1-25CVGS-31-275/SC
Description	AC Type 1+2+3 SPD		AC Type1+2+3 SPD	AC Type 1+2+3 SPD **with integrated counter**
Network	230/400 Vac 3-phase TNC	230/400Vac 3-phase TT-TNS	230/400 Vac 3-phase + N TT-TNS	
Uc	275 Vac		275 Vac	
Iimp/pole	12.5 kA		25 kA	
Iimp total	37.5 kA	50 kA	100 kA	
In/pole	20 kA		25 kA	
Up	1.5 kV		⩽ 1.5 kV	
Part number	821730223	821730244	64135	64136

Note: VG products are advanced products with zero leakage and long life.

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EFFICIENT SURGE PROTECTION OF YOUR INSTALLATIONS

EXAMPLE OF LIGHTNING PROTECTION SYSTEM LEVEL 1
(separation distance kept and in compliance with IEC standards relating to the installation of SPDs)

** Attention: to perform the selection of SPD, it is essential to take into account the sizing of the external lightning system and the respect of separation distances. If the separation distances cannot be respected, the selected SPDs must be of Type 1.*
For more information refer to : CITEL datacenter white paper.

1 Electrical Room

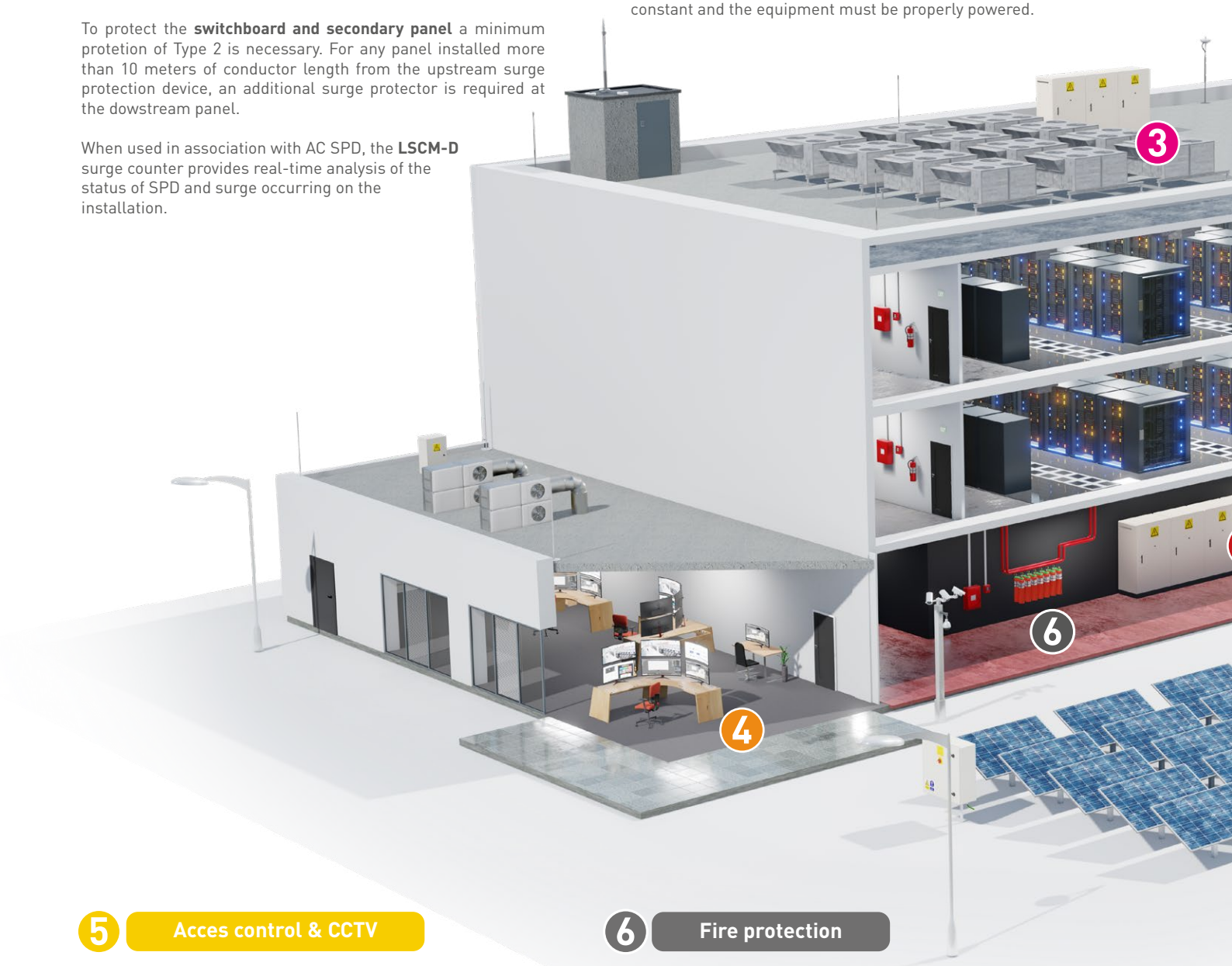
AC SPD
The highest protection level (Type 1) against direct lightning must be installed to protect the **main service entrance** of the installation.

To protect the **switchboard and secondary panel** a minimum protetion of Type 2 is necessary. For any panel installed more than 10 meters of conductor length from the upstream surge protection device, an additional surge protector is required at the dowstream panel.

When used in association with AC SPD, the **LSCM-D** surge counter provides real-time analysis of the status of SPD and surge occurring on the installation.

2 Server Room

AC Type 2 SPD for the **PDU system and busway power and VFD** (variable frequency Drives) : The server room is the most important data center building but it is also the most sensitive of the datacenter, in order to ensure continuity of service of the data servers, the temperature must remain constant and the equipment must be properly powered.



5 Acces control & CCTV

Dataline and ethernet SPD
To ensure a high level of protection in critical environments such as data centers, access control systems and airlocks must be protected by **data line** SPDs. These sites also rely on **video surveillance,** with each camera point also requiring protection against power surges.

6 Fire protection

AC and DC Type 2 SPD
To ensure the protection of the **fire detection equipment** must be protected by an Type 2 SPD covered by upstream AC models: AC SPD to protect pannel dedicated to the equipement and DC SPD for the battery back-up protection

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3 Cooling system

Dataline SPD
To protect the communication of the **CDU** via Modbus or Bacnet installation of relevant surge protectors is highly recommended.

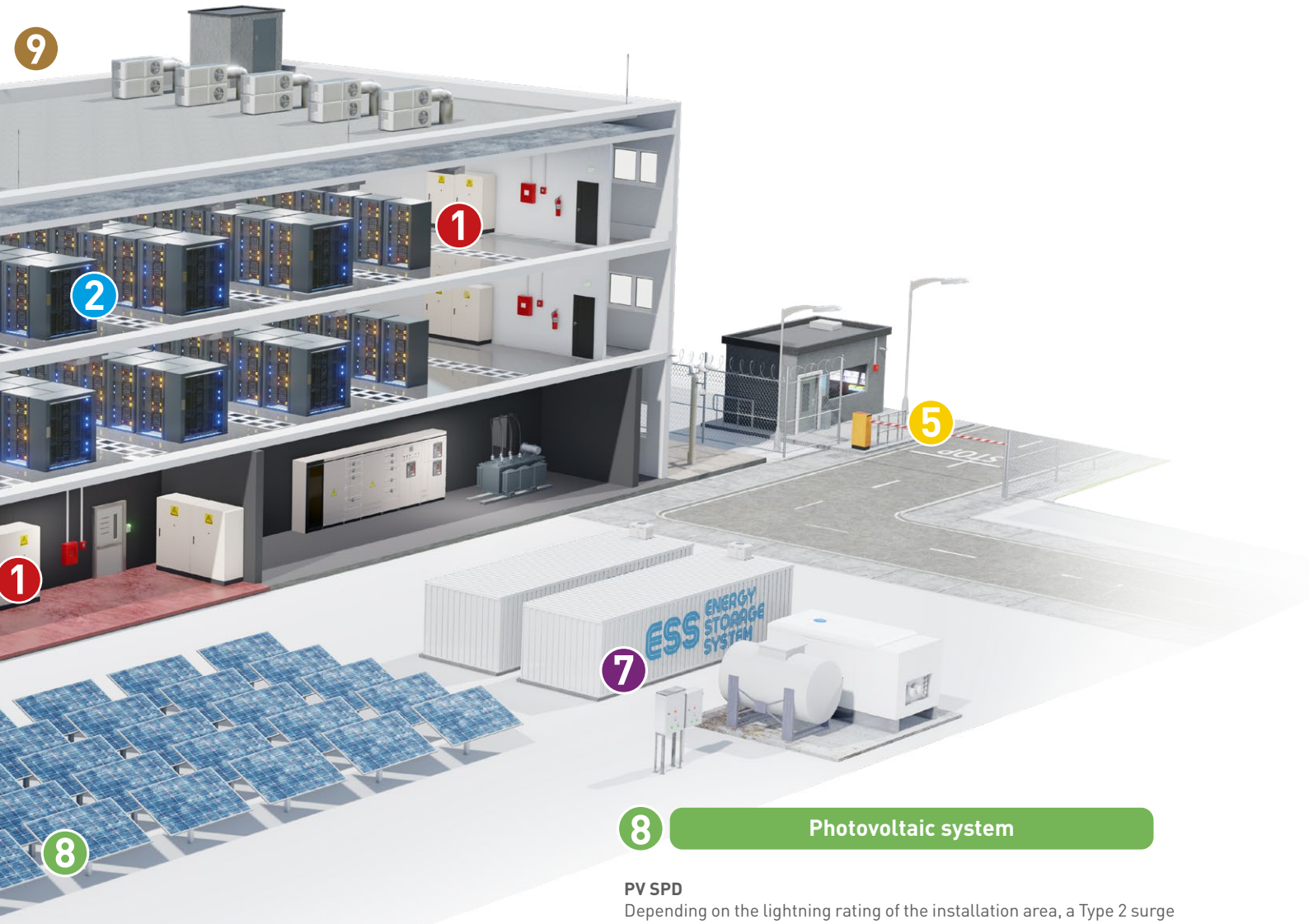
AC SPD
A protection on the AC side of **cooling system** must be installed.

DC SPD
A DC SPD will ensure the protection of the **control cabinet (PLC)**.

4 Instrumentation & Control room

Dataline SPD
It is strongly recommended to install protective devices on data network connections, instrumentation panels and the control room or equipment (temperature probes) etc...

Ethernet SPD
To protect sensitive local area network equipment, different format of SPD (Ethernet/POE/C6A) such as rack-mounted protection systems or individual RJ45 surge protectors.



8 Photovoltaic system

PV SPD
Depending on the lightning rating of the installation area, a Type 2 surge protector on the DC network at **the inverter** input may be required. Additional protection in the junction box will be necessary if its distance to the inverter exceeds 10m of conductor.

AC SPD
A protection on the AC side of the inverter must be installed.

7 Genset and storage system

DC SPD
To ensure the protection of the DC side of the storage system, it is necessary to use robust DC SPDs designed specifically for **protecting DC applications with high short-circuit currents.** They must be **combined with fuses specially designed for SPD protection.**

9 GPS/GNSS

COAXIAL SPD
Surge protection of GNSS/GPS links is essential, especially when the antenna is installed outdoors. Using a surge protector designed for RF coaxial lines ensures system safety.

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DAC50S-30-275

DAC50S-31-275

DAC50S

Type 2 Surge Protectors for AC power supply IEC 61643-11 certified

FOR PRIMARY SWITCHBOARDS / AC POWER INPUT OF EQUIPMENT (BUSWAY/ PDU/ CDU/PLC CONTROL CABINET/VFD PANEL)

CITEL model	DAC50S-11-275	DAC50S-30-275	DAC50S-31-275	DAC50S-40-440
Description	AC Type 2 SPD			
Network	230 V Single-phase / TT-TN	230/400 Vac 3-phase / TNC	230/400 V 3-phase+N / TT-TNS	230/400 V 3-phase+N / IT
Uc	275 Vac	275 Vac	275 Vac	440 Vac
In	20 kA	20 kA	20 kA	20 kA
Imax	50 kA	50 kA	50 kA	50 kA
Up	1.5 kV / 1 kV	⩽ 1.25 kV	1.5 kV / 1.25 kV	⩽ 2 kV
Part number	821110242	821110223	821110244	821110424

Note: Specific version with VG technology DAC50VGS available: VG technology (suppression of operating and leakage currents) is preferred for SPD dedicated to be installed at the head of the installation.

DACF25S

Type 2 Surge Protectors with integrated fuses IEC 61643-11 certified

FOR SECONDARY PANELS/RPP

DACF25S-11-275

CITEL model	DACF15S-11-275	DACF25S-31-275	DACF25S-40-440
Description	AC Type 2 SPD **with integrated fuse**		
Network	230 V single-phase TT-TNS	230/400 V 3-phase+N TT-TNS	3-phase+N IT
Uc	275 Vac	275 Vac	440 Vac
In	5 kA	15 kA	15 kA
Imax	15 kA	25 kA	25 kA
Up L/N - N/PE	1.5 kV/1 kV	1.5 kV/1.25 kV	2 kV
Part number	821310242	821410244	821410424

LIGHTNING AND SURGE CURRENT COUNTER & SPD MONITORING DEVICE

LSCM-D

Smart SPD Monitoring Device

IEC 62561-6 compliance

CITEL Model	LSCM-D/230AC/P1000
Uc	230 Vac
Minimum current sensibility	1000 A
Max. admissible impulse current	1-100 kA (8/20us) / 1-50 kA (10/350us)
Communication	RS485 interface / MODBUS protocol
Part number	821310242

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DATALINE SURGE PROTECTION
for instrumentation panel and control room

DLATS1
Plugable surge protectors for Datalines
IEC 61643-21 compliance

DLATS1

CITEL model	DLATS1-12D3	DLATS1-24D3	DLATS1-170
Description	Telecom/ SPD with remote signaling		
Application	RS232, RS485	Current loop 4-20 mA	RTC, ADSL2, VDSL2
Config.	1 twin wire + shield	1 twin wire + shield	1 twin wire + shield
Un	12 Vdc	24 Vdc	170 Vdc
D1 (Iimp)	5 kA	5 kA	5 kA
C2 (In)	5 kA	5 kA	5 kA
C3 (Up) L/PE	30 V	40 V	220 V
Part number	6417021	6417031	6415051

ETHERNET NETWORK SURGE PROTECTOR
for LAN and CCTV

GamA PL
19" Rack surge protectors

CITEL model	PL12-CAT6	PL24-CAT6
configuration	12 ports	24 ports
Network	1 Gigabit Ethernet	1 Gigabit Ethernet
Connection	RJ45	RJ45
Uc	8 Vdc	8 Vdc
In	2 kA	2 kA
D1 (Iimp)	500 A	500 A
C3 (Up)	< 20 V	< 20 V
Part number	581534	581515

PL24-CAT6

MJ8 CWMJ8
Surge protectors for CAT6A and POE++ application Indoor & Outdoor

CITEL model	MJ8-C6A	MJ8-POE-C6A	CWMJ8-POE-C6A	LAN-10G-POE-CR
Description	10 Gigabit Ethernet	10 Gigabit Ethernet POE++	Outdoor 10 Gigabit Ethernet POE++	Outdoor 10 Gigabit Ethernet POE++
Connection	RJ45	RJ45	RJ45	RJ45
Uc	8 Vdc	60 Vdc	60 Vdc	60 Vdc
In	2 kA	2 kA	2 kA	2 kA
Iimp	500 A	500 A	500A	500A
Up	< 20 V	< 70 V	70 V	10 V
Part number	581540	581541	581544	581547

MJ8-POE-C6A

CWMJ8-POE-C6A

LAN-10G-POE-CR

COAXIAL SURGE PROTECTION
for GPS/GNSS links

P8AX25-N/FF

CITEL model	P8AX series
Description	Protection of coaxial ports
Connection	N, TNC, BNC, F, SMA, 7/16
Maximum power	up to 500 W
Bandwidth	> 3 GhZ*
In	5 kA
Imax	20 kA
Iimp	2.5 kA
Mounting	Feedthrough

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DC SURGE PROTECTION

For PLC Control Cabinet/Battery Power Supply

DDC20CS-20 DDC30CS-20

DDC20CS series
DDC30CS series

Type 2 pluggable surge protectors for DC power supply prIEC 61643-41 compliant

CITEL model	DDC20CS-20-24	DDC20CS-20-38	DDC30CS-20-65
Uc DC	24 Vdc	38 Vdc	65 Vdc
In	10 kA	10 kA	15 kA
Imax	20 kA	20 kA	30 kA
Up	250 V	250 V	300 V
Part number	828210321	828210421	828310121

For Energy Storage System (ESS)

DDC50S-21Y-1500

DDC50S

Type 2 Surge Protectors for DC power Specialy developed

FOR ESS AND EV CHARGING SYSTEMS

prIEC 61643-41 compliant

CITEL model	DDC50S-21Y-500	DDC50S-21Y-1200	DDC50S-21Y-1500
Uc DC	500 Vdc	1200 Vdc	1500 Vdc
In / Pole	20 kA	20 kA	20 kA
Imax / Pole	50 kA	50 kA	50 kA
Up (/n)	2.1 kV	3.6 kV	5.1 kV
Part number	828511263	828511563	828511663

For Photovoltaic

DPVN1-6CVGS-21Y-1500

DPVN40CVGS-21Y-1200

DPVN1-6CVGS
DPVN40CVGS

Type 1+2+3 PV surge protectors Itotal 12.5 kA IEC 61643-31 certified

Type 2+3 PV surge protectors IEC 61643-31 certified

CITEL model		DPVN1-6CVGS-21Y-1200	DPVN1-6CVGS-21Y-1500	DPVN40CVGS-21Y-1200	DPVN40CVGS-21Y-1500
Maximum DC operating voltage	Ucpv	1200 Vdc	1500 Vdc	720 Vdc	960 Vdc
Nom. discharger current (8/20µs)	In	20 kA	20 kA	20 kA	20 kA
Lightning current (10/350µs)	limp	6.25 kA	6.25 kA	-	-
Total lightning current (10/350µs)	Itotal	12.5 kA	12.5 kA	-	-
Max. discharge current	Imax	-	-	40 kA	40 kA
Protection level	Up	4.3 kV	4.8 kV	4.3 kV	4.8 kV
Remote signalling		Yes	Yes	Yes	Yes
Thermal disconnection		CTC technology (Central Control Thermal)			
Part number		65222102	65222103	65122102	65122103

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