



CITEL



COMPUTER NETWORK SURGE PROTECTORS

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PROTECTING DATA-PROCESSING NETWORKS

For industrial sites or business buildings integrating Local Area Networks (LAN), any single issue at one of these systems will create consequences, more or less, to the safety and productivity of the entire system.

It is now more and more crucial to reinforce the level of reliability for these systems: this can be achieved by using a proper surge protection strategy for these sensitive networks.

As is the case in telecom or industrial networks, the installation of surge protectors on data-processing networks is necessary, especially in the following cases:

- » Inter-building networks
- » Wide networks
- » High Electromagnetic disturbance density
- » Heavy Lightning exposure

As for the other types of transmission lines, CITELE surge protectors for LANs are based on an association of 3-pole gas tubes and fast clamping diodes to ensure efficiency on lightning surges. In addition, two additional parameters need to be taken into account: the voltage level of the application and the very high data transmission speed. CITELE surge protectors for data-processing networks are designed for both of these requirements.

Performances

Ethernet network surge protectors are designed for computer networks with very fast data transfer speed up to 10 Gbit/s for the Ethernet Category 6A networks. In order to cover the many various types of networking applications, CITELE offers a complete range of surge protectors adapted to these Ethernet and PoE networks.

Standard

Surge protectors for LAN are in compliance with IEC 61643-21.

CITELE RANGE FOR ETHERNET & POE

CITELE Surge protector for LAN can be adapted to the different configurations. They are equipped with the network connection (RJ45) and available either in an individual box for the protection of an isolated terminal, or in a 19" Rack version for multi-line protection at hub or server level.

Surge Protectors for terminal equipment

CITELE offers several configurations depending on the types of network and the performance protection required:



The MJ8-C6A are dedicated all STP (shielded cable) Ethernet networks up to the Category 6A. Their GDT/Diodes circuit gives them the discharge capacity necessary for the protection of inter-building connections.

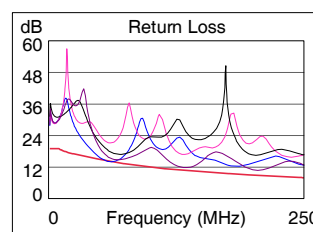
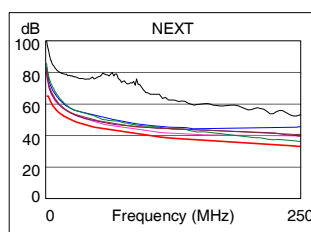
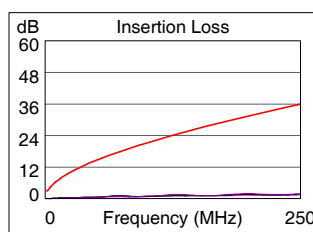


The MJ8-POE-C6A are designed to protect indoor equipment connected to PoE++ networks, up to Category 6 A.



The CxMJ8-POE-C6A are designed to protect outdoor equipment connected to PoE++ networks, up to Category 6 A.

TRANSMISSION CURVES (MJ8-C6A)



Multi-port surge protectors 19" Rack format

CITEL offers several configurations depending on the types of network and the protection performance required:

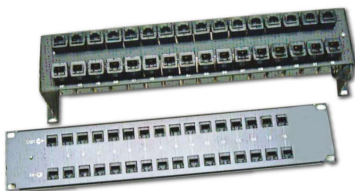
PL range

Available in 24 and 12 ports. Category 6 compatible. Shielded RJ45 input/output. STP cabling. GDT/diodes diagram.



RAK range

Available in 32 and 16 ports. Category 6, PoE and coaxial BNC connection versions. Input/output by connectors on front. UTP cabling.



PCH range

Available in 48, 24 and 12 ports. Category 6, PoE and Telecom versions. Connection by self-stripping connectors/terminal. UTP cabling.



INSTALLATION

The surge protector for IT networks must be installed while respecting the following principles:

- SPDs must be installed on the both sides of the transmission line (e.g. server side and terminal equipment side)
- The surge protector and the protected equipment must be interconnected with the bonding network of the installation.
- The earthing conductor (between the earth output of the SPD and the bonding circuit of the installation) must be as short as possible (less than 0.50 m).
- The AC power supply of the equipment must also be surge protected.

PROTECTING VIDEO DATA TRANSMISSION

Video transmission lines (survey cameras) are regularly subjected to transient surges due to the nature of their distributed application. In order to insure the integrity of these installations, the application of dedicated SPDs at the equipment level (cameras) as well as at the server is absolutely necessary.

CITEL RANGE

The CITEL surge protectors for video-transmission are adapted to different configurations:

Video via coaxial cable: a surge protector is installed on the coaxial connection (CXP and CNP ranges).

The power supply as well as the control links must also be protected : The MSP-VM-2P surge protectors bring together all the protection devices in one single unit.



MSP-VM-2P



CNP

Video over IP: a MJ8-C6A surge protector must be installed on the IP connection.

The AC power supply of the terminal equipment must also be protected :The MSP-VM/R surge protector brings together all the protection devices in one single unit.

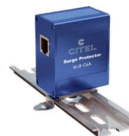


MSP-VM/R



MJ8-POE-C6A

Video over PoE: a PoE compatible surge protector (MJ8-POE-C6A) must be installed on the terminal equipment. In the case of outdoor installation, the CRMJ8-POE-C6A or CWMJ8-POE-CA6 is necessary.



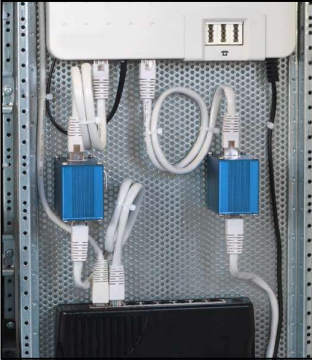
MJ8-POE-C6A



CRMJ8-POE-C6A

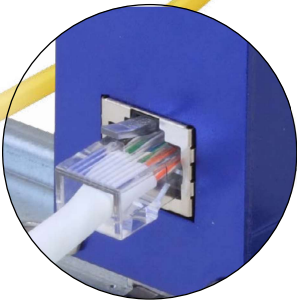
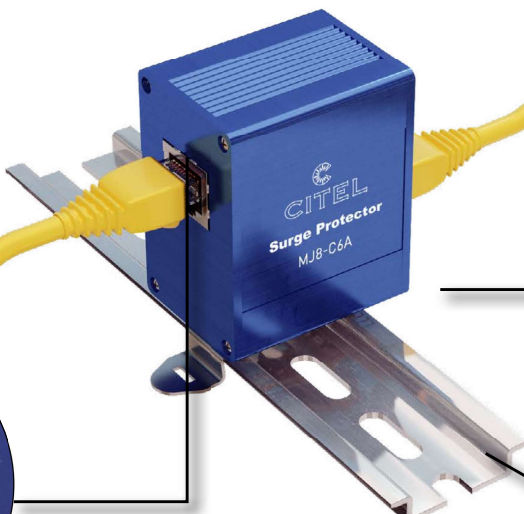
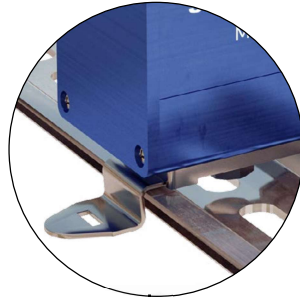
CITEL MJ8 SERIES

Installation

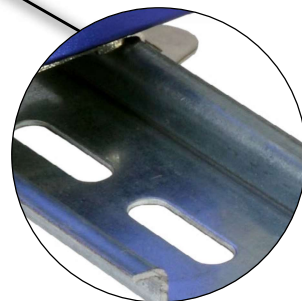


The protection of your Ethernet equipment.

Mounting
On Rail
or by flange



RJ45 connection
Immediate implementation by
connection of the RJ45 cables



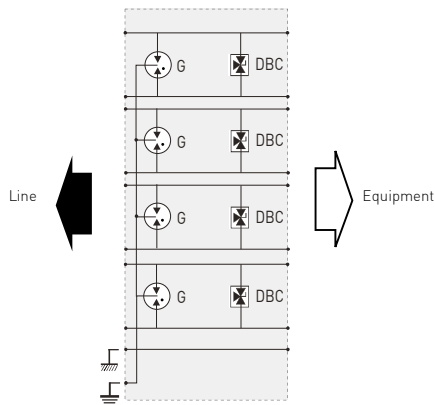
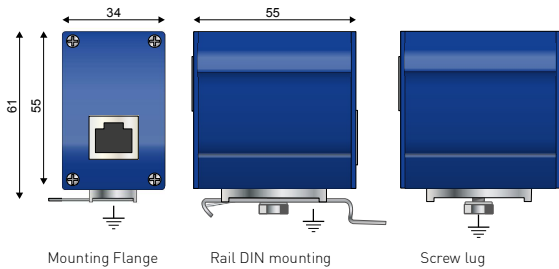
Ground connection
via DIN Rail

MJ8-C6A



- up to 10Gigabit Ethernet compatible
- Category 6A compatible
- RJ45 connectors
- Bi-directional
- Mounted on frame or DIN rail
- IEC 61643-21, EN 61643-21 and UL497B compliance

Characteristics



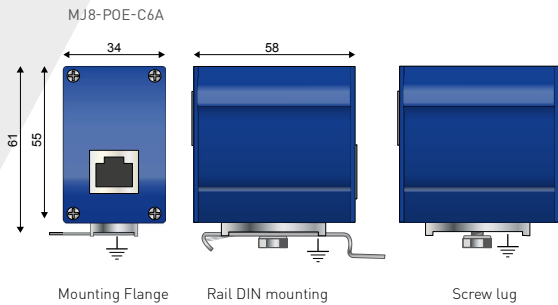
G : 3-electrode gas tube
 DBC : Low capacitance diode

CITEL Model	MJ8-C6A
Description	RJ45 surge protector for Category 6A network
Network	10Gigabit Ethernet Category 6A
Max. data rate	10 Gbps
SPD configuration	4 pairs + shield
Pin outs	(1-2)(3-6)(4-5)(7-8)
Nominal line voltage	Un 5 Vdc
Max. DC operating voltage	Uc 8 Vdc
Max. Load current	IL 1000 mA
Max. frequency	f max > 500 MHz
Insertion loss	< 1 dB
Line/Ground Nominal discharge current <i>8/20µs Test x 10 - category C2</i>	In 2000 A
Nominal discharge current Line/Line <i>8/20µs Test x 10 - category C2</i>	In 500 A
Impulse current - <i>2 x 10/350µs Test - D1 Category</i>	Iimp 500 A
Protection level <i>following C3 Category test -Line/Line</i>	Up 20 V
Failsafe behavior	Short-circuit
Mechanical characteristics	
Dimensions	see diagram
Format	RJ45 connector
Connection to Network	RJ45 shielded connector female input/output
Disconnection indicator	transmission interrupt - default mode 2
Mounting	Mounting flange, Screw lug, DIN Rail
Operating temperature	-40/+85°C
Protection rating	IP20
Housing material	Aluminium
Standards	
Compliance	IEC 61643-21 / EN 61643-21 / UL497B IEEE 802-3af/3at/3bt/ ANSI/TIA-568-C.1
Part number	581540

MJ8-POE SERIES

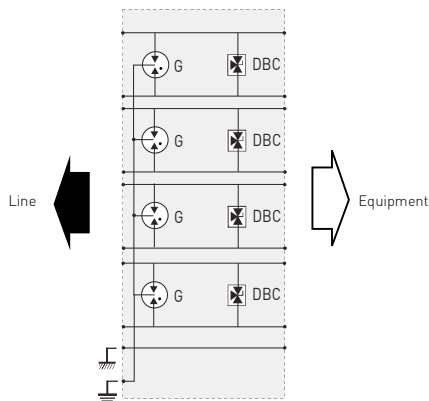


- PoE++ compatible
- up to 10Gigabit Ethernet compatible
- Category 6A or 5E compatible
- RJ45 connectors
- Bi-directional
- Mounted on frame or DIN rail
- IEC 61643-21, EN 61643-21 and UL497B compliance



Characteristics

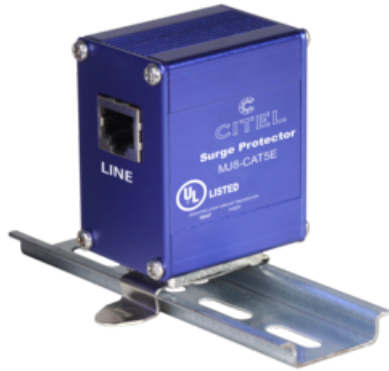
CITEL Model	MJ8-POE-C6A	MJ8-POE-A
Description	RJ45 surge protector for POE++	
Network	10Gigabit Ethernet, Category 6A	Gigabit Ethernet, Category 5E
Max. data rate	10 Gbps	1 Gbps
SPD configuration	4 pairs + shielded	4 pairs + shielded
Pin outs	(1-2)(3-6)(4-5)(7-8)	(1-2)(3-6)(4-5)(7-8)
Nominal line voltage	Un 48 Vdc	48 Vdc
Max. DC operating voltage	Uc 60 Vdc	60 Vdc
Max. Load current	IL 2000 mA	2000 mA
Max. frequency	f max > 500 MHz	> 100 MHz
Insertion loss	< 1 dB	< 1 dB
Line/Ground Nominal discharge current <i>8/20µs Test x 10 - category C2</i>	In 2000 A	2000 A
Nominal discharge current Line/Line <i>8/20µs Test x 10 - category C2</i>	In 500 A	500 A
Impulse current - <i>2 x 10/350µs Test - D1 cat.</i>	Iimp 500 A	500 A
Protection level <i>following C3 Category test - Line/Line</i>	Up 70 V	70 V
Failsafe behavior	Short-circuit	Short-circuit
Mechanical characteristics		
Dimensions	see diagram (0.106 kg)	
Format	Metallic box with connectors input/output	
Connection to Network	RJ45 shielded connector female input/output	
End of life	transmission interrupt - default mode 2	
Mounting	Mounting flange, Screw lug, DIN Rail	
Operating temperature	-40/+85°C	
Protection rating	IP20	
Housing material	Aluminium	
Standards		
Compliance	IEC 61643-21 / EN61643-21 / UL497B	IEC 61643-21 / EN 61643-21 / UL497B
Certification	IEEE 802-3af/3at/3bt UL listed	IEEE 802-3af/3at/3bt UL listed
Part number		
	581541	581519



G : 3-electrode gas tube
DBC : 3-pole Low capacitance diode



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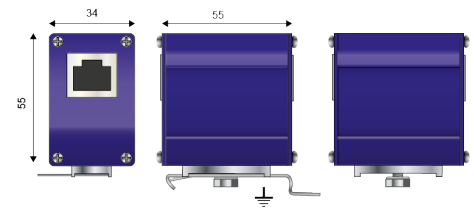


MJ8-CAT5E



- CAT5 networks surge protector
- 10/100/1000BaseT compatible
- RJ45 connector
- Shielded enclosure
- Bi-directional

Electrical Characteristics		
Network		Gigabit Ethernet, Cat.5E cabling
Nominal line voltage	U_n	5 Vdc
Max. DC operating voltage	U_c	8 Vdc
Max. load current	I_L	1000 mA
Max. data rate		1000 Mbps
Max. frequency	f	> 100 MHz
Insertion loss		< 1 dB
Protection level	U_p	20 V
<i>Following the test category C3 (IEC61643-21) - Line/Line</i>		
Max. shunt capacitance	C	< 25 pF
Impulse current	i_{imp}	500 A
<i>2 x 10/350µs Test - D1 Category</i>		
Line/Line Nominal discharge current	$I_n L/L$	500 A
<i>8/20µs Test x 10 - C2 Category</i>		
Line/Ground Nominal discharge current	$I_n L/PE$	2000 A
<i>8/20µs Test x 10 - C2 Category</i>		



Mechanical Characteristics		
Technology		GDT+clamping diode
SPD configuration		4 pairs + shielded
Connection to Network		RJ45 shielded connectors female input/output
Format		Connector RJ45
Mounting		Mounting flange, Screw lug, DIN Rail
Housing material		Aluminium
Operating temperature		-40/+85°C
Protection rating		IP20
Failsafe behavior		Short-circuit
Disconnection indicator		Transmission interrupt
Pin outs		(1-2)(3-6)(4-5)(7-8)
Dimensions		See diagram (0.114 kg)

Standards		
Standards compliance		IEC 61643-21 / EN 61643-21 / UL497 B / IEEE 802-3ab
Part Number		560201



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MJ8-CAT6S

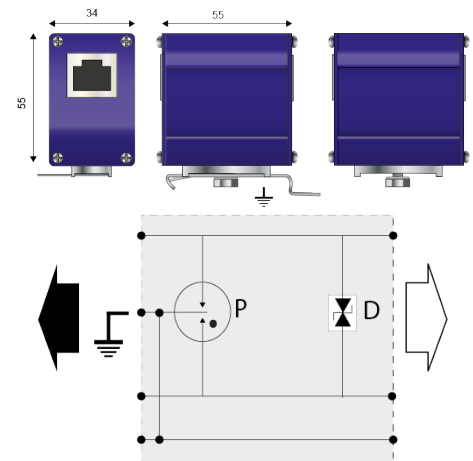


- CAT6 networks surge protector
- 10/100/1000BaseT compatible
- RJ45 connector
- Shielded enclosure
- Bi-directional

Electrical Characteristics		
Network		10Gigabit Ethernet, Cat.6 cabling
Nominal line voltage	U_n	5 Vdc
Max. DC operating voltage	U_c	8 Vdc
Max. load current	I_L	1000 mA
Max. data rate		10 Gbps
Max. frequency	f	> 250 MHz
Insertion loss		< 1 dB
Protection level	U_p	20 V
<i>Following the test category C3 (IEC61643-21) - Line/Line</i>		
Max. shunt capacitance	C	< 25 pF
Impulse current	i_{imp}	500 A
<i>2 x 10/350µs Test - D1 Category</i>		
Line/Line Nominal discharge current	$I_n L/L$	500 A
<i>8/20µs Test x 10 - C2 Category</i>		
Line/Ground Nominal discharge current	$I_n L/PE$	2000 A
<i>8/20µs Test x 10 - C2 Category</i>		

Mechanical Characteristics		
Technology		GDT+clamping diode
SPD configuration		4 pairs + shielded
Connection to Network		RJ45 shielded connectors female input/output
Format		Connector RJ45
Mounting		Mounting flange, Screw lug, DIN Rail
Housing material		Aluminium
Operating temperature		-40/+85°C
Protection rating		IP20
Failsafe behavior		Short-circuit
Disconnection indicator		Transmission interrupt
Pin outs		(1-2)[3-6][4-5][7-8]
Dimensions		See diagram (0.117 kg)

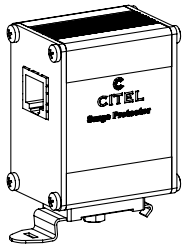
Standards		
Standards compliance		IEC 61643-21 / EN 61643-21 / UL497 B / IEEE 802-3an
Part Number		560303





INSTALLATION INSTRUCTIONS - NOTICE D'INSTALLATION
 NOTICIA DE INSTALACIÓN - INSTALLATIONSHINWEISE
 ISTRUZIONI PER L'INSTALLAZIONE
 INSTRUCOES DE INSTALACAO - MONTÁŽNÍ NÁVOD
 РУКОВОДСТВО ПО МОНТАЖУ - 安装指导书

Dataline surge protector
 Parafoudre pour ligne de données
 Protección para líneas datos
 Überspannungsschutz für Datentechnik
 Protezione per linee dati
 Protetor de Surto para linha de dados.



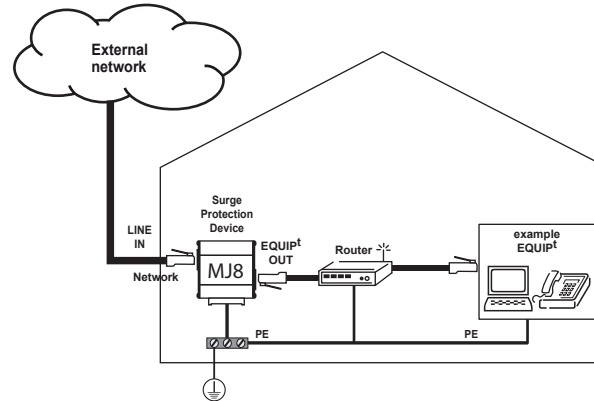
MJ8-xxx

Technical Data

2000 m max. 6500 ft max. -40/+85°C max. -49/+185°F max. IP20 indoor use only	P/N						
	MJ8-CAT5E	MJ8-POE-A	MJ8-POE-B	MJ8-12V	MJ8-170V	MJ8-ISDN	MJ8-CAT6S
Application							
Ethernet 100 / 1000 - CAT5E	●						●
Ethernet 100 / 1000 - CAT6							●
Power over Ethernet Mode A		●					
Power over Ethernet Mode B			●				
12V / RS232				●			
Analog Telecom / DSL - pairs					●		
ISDN T0						●	

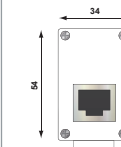
Table 1

Application example

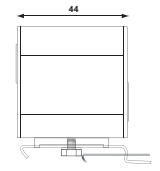


Dimension

MJ8-CAT5E

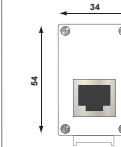


Bracket

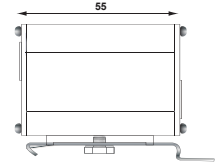


Din rail mounting

MJ8-CAT6S



Bracket



Din rail mounting

Installation - Grounding

1- DIN-rail	2- Bracket	3- Wire
<p>DIN rail adapter screw screw nut</p> <p>1 </p> <p>2 </p> <p>Clip on symmetrical DIN rail DIN-rail</p>	<p>earthing plate countersunk screw</p> <p>1 </p> <p>2 </p> <p>mount MJ8 on earthing plate</p>	<p>screw screw nut cable shoe</p> <p>1 </p> <p>2 </p> <p>3 </p> <p>press cable shoe Line</p>

Table 2

Wiring

Equip^t

connect RJ45 cable with MJ8

Line

Maintenance

and replace with MJ8-xxx



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SAFETY INSTRUCTIONS
 CONSIGNES DE SECURITE
 SICHERHEITSHINWEISE
 ADVERTENCIA DE SEGURIDAD
 AVVERTENZE IMPORTANTI
 AVISOS IMPORTANTES
 МЕРЫ БЕЗОПАСНОСТИ
 BEZPEČNOSTNÍ POKYNY
 安全須知



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N121104a



ATTENTION !

GB

- Installation must be performed only by electrically skilled operator.
- National electrical installation rules must be followed.
- The unit must be used only as surge protector and according the conditions described in this document.
- The device must be selected according to the application and the voltage (Table 1).
- If the signal is interrupted, then the unit is defect and must be replaced.



ATTENTION !

FR

- L'installation ne doit être effectuée que par un opérateur électricien dûment qualifié.
- Les règles générales d'installation électrique nationales doivent être respectées.
- Le produit est uniquement destiné à un usage parafoudre et doit être utilisé dans les conditions décrites dans ce document.
- Le parafoudre doit être choisi en fonction du réseau et de la tension (Tableau 1)
- En cas de défaut, la transmission du signal sera interrompue et le parafoudre devra être remplacé.



WARNING !

D

- Die Montage und der Anschluss des Gerätes dürfen nur durch eine Elektrofachkraft durchgeführt werden.
- Nationale Installations Vorschriften sind zu beachten.
- Das Gerät ist nur im Rahmen dieser Installationshilfe und seiner technischen Daten zu verwenden.
- Die Ableiter sind entsprechend der Spannung und Anwendung auszusuchen (siehe Tabelle 1).
- Überprüfen sie den integrierten Gasableiter und tauschen Sie ihn ggf durch einen neuen aus..



ATENCION !

ES

- Solo un operador eléctrico capacitado puede realizar la instalación.
- Las reglas generales nacionales de instalación eléctrica deben ser respetadas.
- El producto solo tiene un uso de protección contra sobretensiones transitorias y debe ser utilizado en las condiciones mencionadas en este documento.
- El dispositivo debe ser seleccionado según la aplicación y la tensión (Tabla 1).
- Si se corta la señal, el modulo esta en estado defectuoso y debe ser sustituido.



ATTENZIONE !

IT

- L'installazione deve essere fatta solamente da elettricisti qualificati.
- Devono essere rispettate le regolamentazioni nazionali e locali riguardanti l'installazione di apparati elettrici.
- L'unità deve essere usata solo come protezione da sovratensioni e secondo le condizioni descritte in questo documento.
- Il dispositivo deve essere scelto secondo l'applicazione e la tensione (quadro 1).
- Se la segnale si interrompe, il modulo è allora difettoso e deve essere cambiato.



AVISO !

PT

- A instalação deve ser feita por um electricista habilitado.
- Devem ser seguidas todas as regras de segurança indicadas pelo operador eléctrico.
- Esta protecção deve ser utilizada apenas como protecção contra sobretensões e de acordo com as condições mencionadas neste documento.
- O dispositivo deve ser seleccionado de acordo com a aplicação e a voltagem (tabla 1)
- Se o sinal estiver cortado, o módulo está então defeituoso e deve ser substituído



ВНИМАНИЕ!

RUS

- монтаж и подключение изделия должны производиться только специалистами-электриками.
- необходимо учитывать требования местных норм и стандартов.
- изделие может использоваться только для защиты от импульсных перенапряжений в соответствии с настоящей инструкцией.
- Устройство нужно выбирать в соответствии с напряжением и видом защищаемой линии (см. таблицу 1).
- При отсутствии сигнала в линии устройство неисправно и должно быть заменено.



VAROVÁNÍ

CZ

- Montáž a připojení svodiče přepětí smí provádět pouze pracovník s příslušnou elektrotechnickou kvalifikací.
- Je zapotřebí dodržovat zásady bezpečnosti práce i platné národní elektrotechnické předpisy.
- Svodič přepětí se smí používat pouze v souladu se svými technickými parametry a podle těchto montážních pokynů.
- Svodič přepětí musí být vybrán podle aplikace a napěťové úrovně (tabulka 1).
- Je-li signál přerušen, je svodič přepětí vadný a musí být vyměněn.



安全須知!

中文

- 产品安装只能由具备专业资质的人员实施；
- 请遵守国家电气安装相关规范；
- 本产品仅作为浪涌保护器且在本文件所规定的条件下使用；
- 应根据具体应用和工作电压选择器件（表1）
- 如果信号中断，则模块已失效，应予以更换