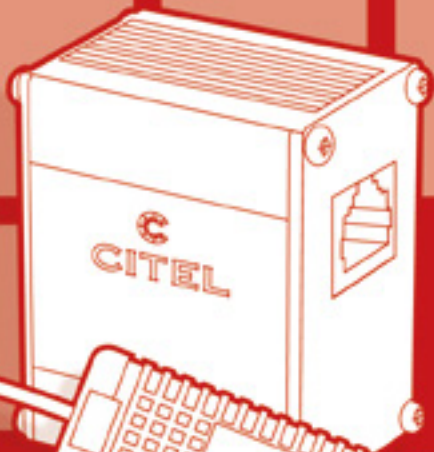




CITEL



DATA LINE

Surge Protectors



Data Surge Protectors



Protecting data-processing networks

For industrial sites or secondary buildings integrating a linked computer network, 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

As for the other types of transmission lines, CITEL surge protectors for Local Area Networks (LANs) are based on an association 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 data transmission speed. CITEL 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 speeds up to 10 Gbit/s for the Category 6 networks. In order to cover the many various types of networking applications, CITEL offers a complete range of surge protectors adapted to the most important networks.

Standard

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

CITEL range

CITEL Surge protector for video transmission can be adapted to the different configurations. These are generally 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

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



- the **MJ8-CAT6S** are dedicated to the Category 6 and 5E networks with shielded cable (STP). Their GDT/Diodes circuit gives them the discharge capacity necessary for the protection of inter-building connections.

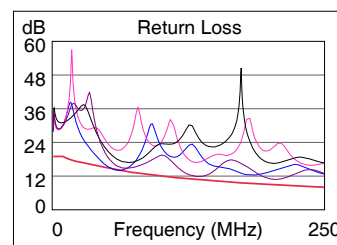
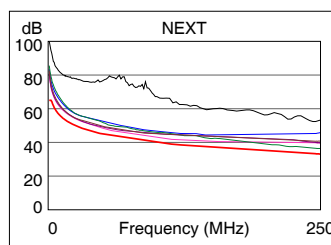
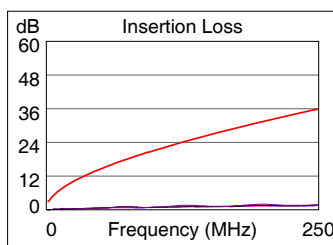


- the **MJ8-POE** are designed to protect indoor equipment connected to PoE networks (A or B configuration).



- Les **CMJ8-POE** are designed to protect outdoor equipment connected to PoE networks.

Transmission curves (MJ8-CAT6 S)



Multi-port surge protectors 19" Rack format

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

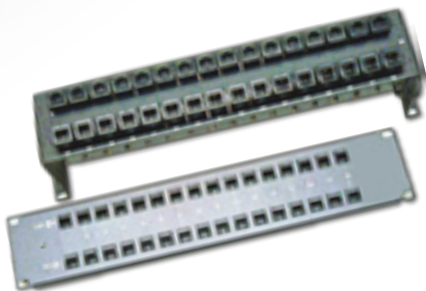
- **Gamme PL**

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



- **Gamme RAK**

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



- **Gamme PCH**

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:

- The surge protector and the protected equipment must be interconnected with the bonding network of the installation.
- The earth discharge conductor (between the earth output of the surge protector 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 (surveillance 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 Digital Recording Devices (DVRs) 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 (CITEL, CXP, CNP range). The terminal power supply and control links must also be protected. The MSP-VM-2P surge protector brings together all the protection devices in one single box.



- Video over IP: a MJ8-CAT5E type 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 box.



- Video over PoE: a PoE compatible surge protector (MJ8-POE) must be installed on the terminal equipment. In the case of outdoor installation, the CMJ8-POE version is necessary.



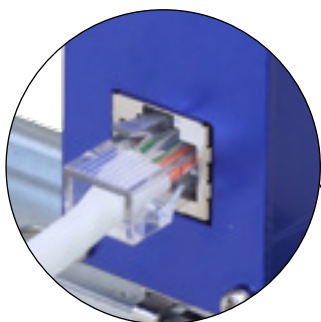
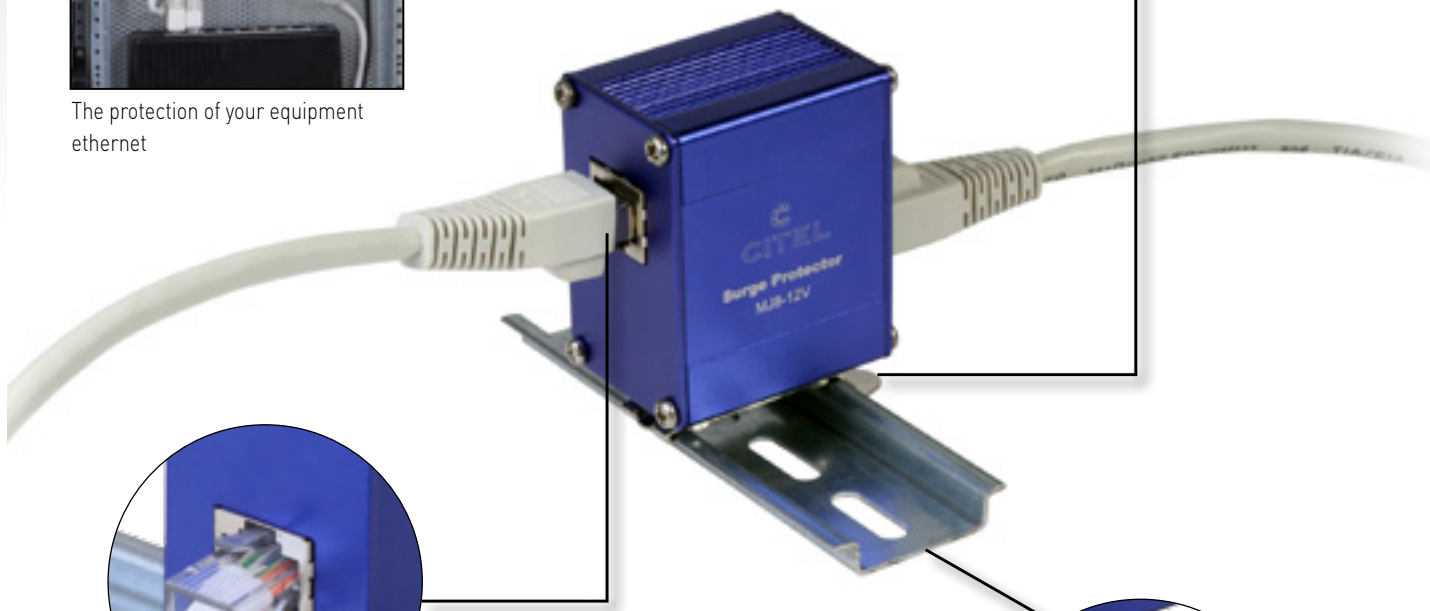
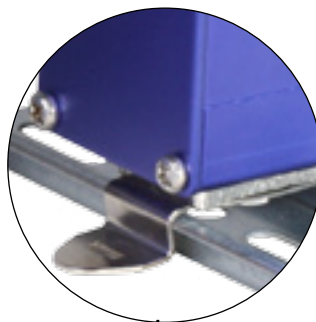
Citel MJ8 series

Installation

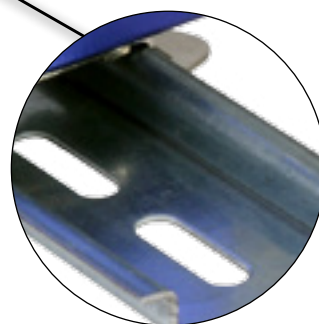


The protection of your equipment ethernet

Mounting
On Rail
or by flange



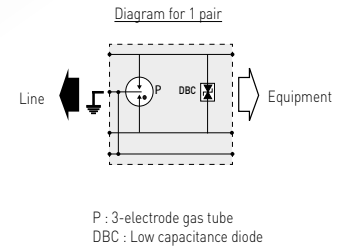
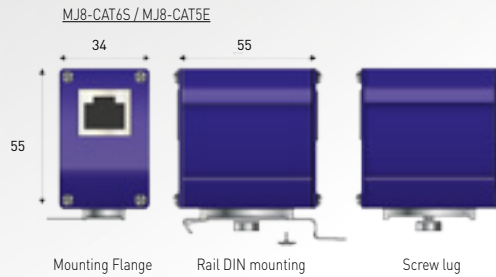
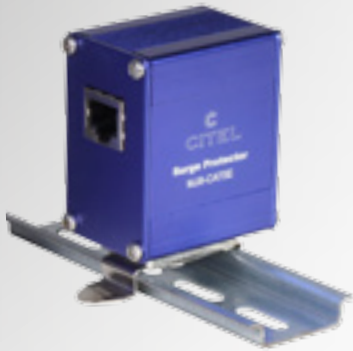
RJ45 connection
Immediate implementation by connection
RJ45 cables



Ground connection
via DIN Rail

Data Surge Protectors

MJ8 series



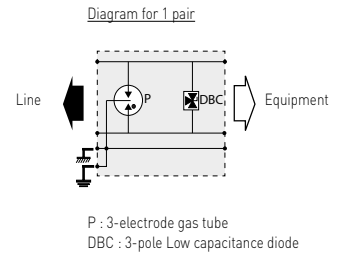
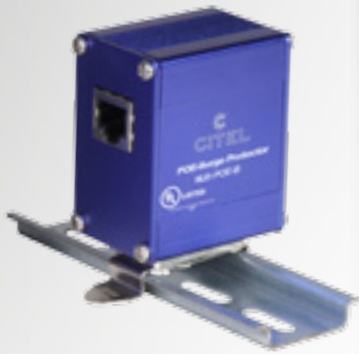
- 100M/1G/ 10Gigabit Ethernet compatible
- RJ45 connectors
- Bi-directional
- Mounted on frame or DIN rail
- IEC 61643-21, EN 61643-21 and UL497B compliance

Characteristics

| CITEL Model | MJ8-CAT6S | MJ8-CAT5E |
|--|---|--|
| Description | RJ45 surge protector for Category 6 network | RJ45 surge protector for Category 5E network |
| Network | 10Gigabit Ethernet câblage Cat.6 | Gigabit Ethernet câblage Cat.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 5 Vdc | 5 Vdc |
| Max. DC operating voltage | Uc 8 Vdc | 8 Vdc |
| Max. Load current | IL 1000 mA | 1000 mA |
| Max. frequency | f max > 250 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 Category</i> | limp 500 A | 500 A |
| Protection level | Up 20 V | 20 V |
| Failsafe behavior | Short-circuit | 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 802-3an | |
| Part number | 560303 | 560201 |

Gigabit POE Surge Protectors

MJ8-POE series



- **POE compatible**
- **Shielded enclosure and connectors**
- **2 kA discharge capability**
- **IEC 61643-21, EN 61643-21 compliance**
- **UL497B**

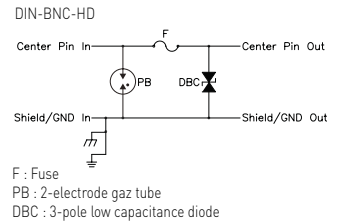
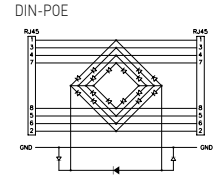
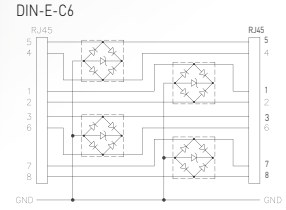
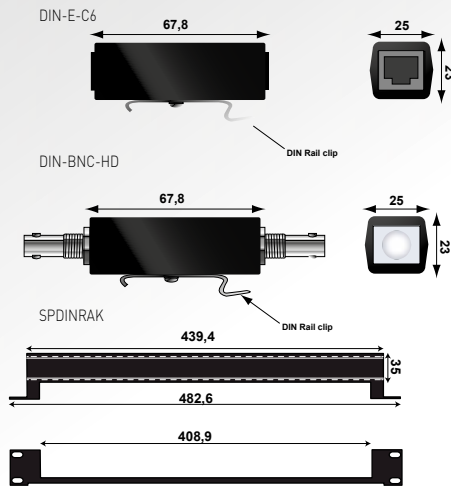
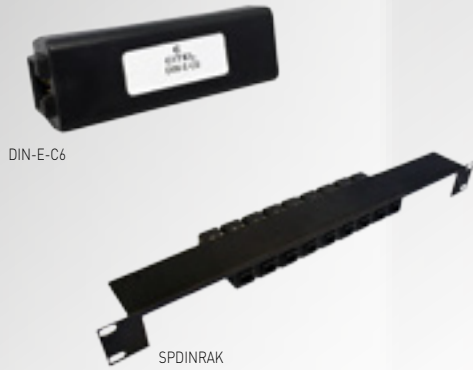
Characteristics

| CITEL Model | MJ8-POE-A | MJ8-POE-B |
|--|---|--------------------------------------|
| Description | RJ45 surge protector for POE-A | RJ45 surge protector for POE-B |
| Network | POE and Gigabit Ethernet, High POE | POE and Gigabit Ethernet, High POE |
| Max. data rate | 1000 Mbps | 1000 Mbps |
| 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 | 5 Vdc/48 Vdc |
| Max. DC operating voltage | Uc 60 Vdc | 7.5 Vdc [1.2.3.6] - 60 Vdc [4.5.7.8] |
| Max. Load current | IL 1200 mA | 1200 mA |
| Max. frequency | f max > 100 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 Category</i> | Iimp 500 A | 500 A |
| Protection level | Up 70 V | 20/70 V |
| Failsafe behavior | Short-circuit | Short-circuit |
| Mechanical characteristics | | |
| Dimensions | see diagram | |
| Format | Metallic box with connectors input/output | |
| 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 802-3ab/3at | |
| Part number | 581519 | 581518 |



Surge protector for coaxial line and RJ

DIN-BNC series



- Surge protector BNC or RJ45
- Mounting on DIN rail
- Adaptable on specific rack 19" (SPDINRAK)
- IEC 61643-21, EN 61643-21 and UL497B compliance

Characteristics

| CITEL Model | DIN-E-C6 | DIN-POE-A | DIN-POE-B | DIN-T | DIN-B | DIN-G | DIN-BNC-HD |
|---|--|--|---|-----------------------------|---------------------------------------|------------------------------------|----------------------------------|
| Description | RJ45 surge protector for cat.6 network | Surge protector for POE | Surge protector for POE | Surge protector for RJ line | RJ45 surge protector for ISDN network | Surge protector for telephone line | Surge protector for coaxial line |
| Network | 10Gigabit Ethernet Cat.6 | POE A Gigabit Ethernet POE Plus | POE B Gigabit Ethernet POE Plus | RS232 - RS485 | ISDN | RTC, ADSL2+, 4 pairs | Video line |
| Max. data rate | 1000 Mbps | 1000 Mbps | 1000 Mbps | 100 Mbps | 40 Mbps | 40 Mbps | 1000 Mbps |
| SPD configuration | 8 wires | 8 wires | 8 wires | 8 wires | 8 wires | 8 wires | 1 coaxial line |
| Pin outs | (1-2) (3-6) (4-5) (7-8) | (1-2) (3-6) (4-5) (7-8) | (1-2) (3-6) (4-5) (7-8) | (1-2) (3-6) (4-5) (7-8) | (1-2) (3-6) (4-5) (7-8) | (1-2) (3-6) (4-5) (7-8) | - |
| Nominal line voltage | Un < 50 V | 48 Vdc | 5 VDC/48Vdc | < 50 V | < 50 V | < 50 V | < 100 V |
| Max. DC operating voltage | Uc 7.5 Vdc | 60 Vdc | Pin 1.2.3.4 : 7.5Vdc Pin 5.6.7.8 : 60Vdc | 18 Vdc | 60 Vdc | 240 Vdc | 7.5 Vdc |
| Max. Load current | IL 750 mA | 750 mA | 750 mA | 750 mA | 750 mA | 750 mA | 750 mA |
| Max. frequency | f max > 250 MHz | > 100 MHz | > 100 MHz | > 100 MHz | > 100 MHz | > 100 MHz | > 100 MHz |
| Insertion loss | < 1 dB | < 1 dB | < 1dB | < 1 dB | < 1 dB | < 1 dB | < 1 dB |
| Line/Ground Nominal discharge current 8/20µs Test x 10 - C2 category | In 500 A | 250 A | 600 A/250 A | 300 A | 300 A | 400 A | 5000 A |
| Nominal discharge current Line/Line 8/20µs Test x 10 - C2 category | In 500 A | 250 A | 600 A/250 A | 300 A | 300 A | 400 A | 5000 A |
| Impulse current - 2 x 10/350µs Test - D1 Category | limp - | - | - | - | - | - | 500 A |
| Protection level | Up 20 V | 80 V | 20 V/80 V | 30 V | 70 V | 300 V | 20 V |
| Failsafe behavior | Short-circuit | Short-circuit | Short-circuit | Short-circuit | Short-circuit | Short-circuit | Short-circuit |
| Mechanical characteristics | | | | | | | |
| Dimensions | see diagram | | | | | | |
| Format | Connector RJ45 | | | | | | connector BNC |
| Connection to Network | connector RJ45 female/female | | | | | | connector BNC fem/fem |
| Disconnection indicator | transmission interrupt - default mode 2 | | | | | | |
| Mounting | DIN rail or specific 19" rack model SPDINRAK (P/N 899001)* | | | | | | |
| Operating temperature | -40/+85°C | | | | | | |
| Protection rating | IP20 | | | | | | |
| Housing material | Thermoplastic UL94-V0 | | | | | | |
| Standards compliance | IEC 61643-21 / EN 61643-21 / UL497B IEEE 802-3an | IEC 61643-21 / EN 61643-21 / UL497B IEEE 802-3at | IEC 61643-21 / EN 61643-21 / UL497B | | | | |
| Part number | 6236 | 6352 | 891709 | 891710 | 6375 | 6374 | 6286 |

* : possibility to mount 16 DINxxx or 12 MJBxxx on rack : SPDINRAK

Outdoor gigabit POE surge protector

CMJ8-POE series



CMJ8-POE-A-CAT5E



CMJ8-POE-A-PCB



CRMJ8-POE-C6

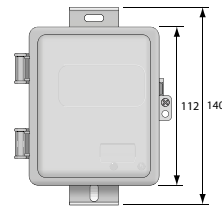
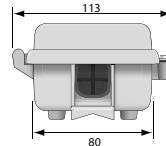
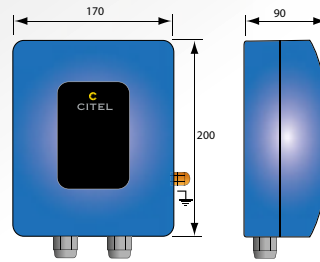
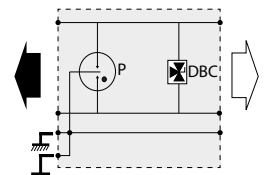


Diagram for 1 pair



P : 3-electrode gas tube
DBC : 3-pole low capacitance diode

- **POE compatible**
- **Outdoor application**
- **Plastic enclosures (CMJ8/CGMJ8) or metallic (CRMJ8)**
- **IP65 and IP66**
- **Shielded RJ45 connectors**
- **2 kA discharge capability**
- **IEC 61643-21, EN 61643-21 and UL497B compliance**
- **UL497A**

Characteristics

| CITEL Model | | C*MJ8-POE-A-C5E | C*MJ8-POE-B-C5E | CRMJ8-POE-C6 |
|---|-------|---|--|--|
| Description | | Outdoor gigabit POE-A surge protector | Outdoor gigabit POE-B surge protector | Outdoor 10Gigabit POE surge protector |
| Network | | POE-A and Gigabit Ethernet, high POE | POE-B and Gigabit Ethernet, high POE | POE and 10Gigabit Ethernet, high POE |
| Max. data rate | | 1000 Mbps | 1000 Mbps | 10 Gbps |
| SPD configuration | | 8 wires + shielded | 8 wires + shielded | 8 wires + shielded |
| Pin outs | | [1-2][3-6][4-5][7-8] | [1-2][3-6][4-5][7-8] | [1-2][3-6][4-5][7-8] |
| Nominal line voltage | Un | 48 Vdc | 5 Vdc/48 Vdc | 5 Vdc/48 Vdc |
| Max. DC operating voltage | Uc | 60 Vdc - 650 mA | 7.5 Vdc (1.2.3.6) - 650 mA. 60 Vdc (4.5.7.8) | 7.5 Vdc - 650 mA. 60 Vdc - 650 mA |
| Max. Load current | IL | 1200 mA | 1200 mA | 1200 mA |
| Max. frequency | f max | > 100 MHz | > 100 MHz | > 250 MHz |
| Insertion loss | | < 1 dB | < 1 dB | < 1 dB |
| Line/Ground Nominal discharge current - 8/20µs Test x 10 - category C2 | In | 2000 A | 2000 A | 2000 A |
| Nominal discharge current Line/Line - 8/20µs Test x 10 - category C2 | In | 500 A | 500 A | 500 A |
| Impulse current - 2 x 10/350µs Test - D1 Category | Iimp | 500 A | 500 A | 500 A |
| Protection level | Up | 70 V | 20/70 V | 20/70 V |
| Failsafe behavior | | Short-circuit | Short-circuit | Short-circuit |
| Mechanical characteristics | | | | |
| Spare unit | | CMJ8-POE-A-C5E/PCB | CMJ8-POE-B-C5E/PCB | CRMJ8-POE-C6/PCB |
| Dimensions | | see diagram | | see diagram |
| Format | | Plastic Box with connectors input/output | | Metal Box with connectors input/output - Reinforced seal |
| Connection to Network | | RJ45 shielded connectors female input/output | | RJ45 shielded connectors female input/output |
| Disconnection indicator | | transmission interrupt - default mode 2 | | transmission interrupt - default mode 2 |
| Mounting | | on plate or pole | | on plate or pole |
| Operating temperature | | -40/+85°C | | -40/+85°C |
| Outdoor application | | yes | | yes |
| Housing material | | Thermoplastic UL94-V0 | | Aluminum cast |
| Standards compliance | | IEC 61643-21 / EN 61643-21 / UL497B IEEE 802-3ab/3at | | IEC 61643-21 / EN 61643-21 / UL497B IEEE 802-3ab/3at |
| Part number | | | | |
| IP65 version | | CMJ8-POE-A-C5E 892002 | CMJ8-POE-B-C5E 892003 | |
| IP66 version - Reinforced seal | | CGMJ8-POE-A-C5E 892004 | CGMJ8-POE-B-C5E 892005 | CRMJ8-POE-C6 581529 |



19" patch panel surge protector PL series



PL24-CAT6

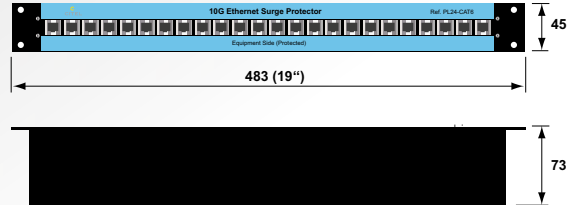
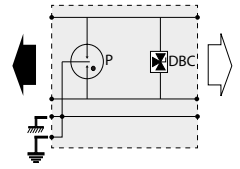


Diagram for 1 pair



P: 3-electrode gas tube
DBC : 3-pole low capacitance diode

- For 100M/1G/10Gigabit Ethernet network
- 19" rack mounted
- 12 or 24 ports
- In/out : RJ45 shielded
- Gas tube/Diode diagram
- Primary protection
- IEC 61643-21, EN 61643-21 and UL497A compliance

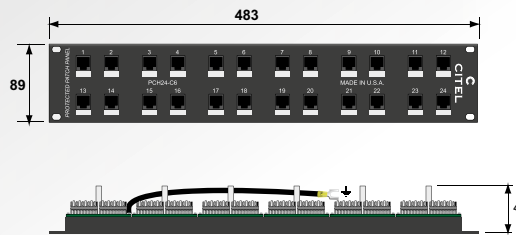
Characteristics

| CITEL Model | | PL12-CAT6 | PL24-CAT6 |
|--|-------|--|--|
| Description | | 19" patch panel surge protector for high speed network STP | 19" patch panel surge protector for high speed network STP |
| Network | | 10Gigabit Ethernet -Cat.6 cabling | 10Gigabit Ethernet -Cat.6 cabling |
| Max. data rate | | 10 Gbps | 10 Gbps |
| SPD configuration | | 12 ports de 8 wires | 24 ports de 8 wires |
| Pin outs | | {1-2}{3-6}{4-5}{7-8} | {1-2}{3-6}{4-5}{7-8} |
| Nominal line voltage | Un | 5 Vdc | 5 Vdc |
| Max. DC operating voltage | Uc | 8 Vdc | 8 Vdc |
| Max. Load current | IL | 1000 mA | 1000 mA |
| Max. frequency | f max | 250 MHz | 250 MHz |
| Insertion loss | | < 1 dB | < 1 dB |
| Line/Ground Nominal discharge current - 8/20µs Test x 10 - category C2 | In | 2000 A | 2000 A |
| Nominal discharge current Line/Line - 8/20µs Test x 10 - category C2 | In | 500 A | 500 A |
| Protection level | Up | 20 V | 20 V |
| Failsafe behavior | | Short-circuit | Short-circuit |
| Mechanical characteristics | | | |
| Dimensions | | see diagram | |
| Format | | Rack 19" | |
| Connection to Network | | RJ45 shielded female input/output | |
| Disconnection indicator | | transmission interrupt - default mode 2 | |
| Spare unit | | 12-port PCB | |
| Mounting | | Baie 19" | |
| Operating temperature | | -40/+85°C | |
| Protection rating | | IP20 | |
| Housing material | | Aluminium | |
| Standards compliance | | IEC 61643-21 / EN 61643-21 / UL497A (surge) IEEE 802-3an (transmission) | |
| Part number | | 581534 | 581515 |

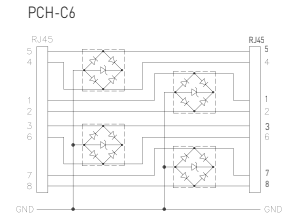
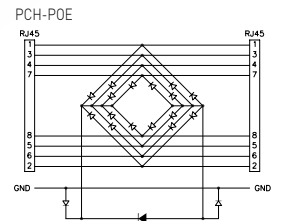
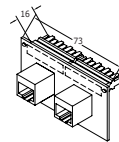


19" patch panel surge protector for Data-Telecom lines

PCH series



Surge protector circuit 2 lines



- 19" Rack mounted
- 12, 24 et 48 ports
- In/out: - Connector type 110 back (punch down) - RJ45 front
- Available for Ethernet network and Telecom
- Possible maintenance per 2 lines circuit
- Secondary protection
- IEC 61643-21 and UL497B compliance

Characteristics

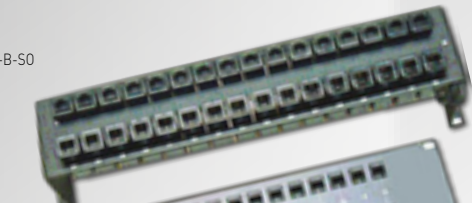
| CITEL Model | PCH*-C6 | PCH*-POE-A | PCH*-POE-B | PCH12-RJ45-G | |
|---------------------------------------|--|--|--|--|-------------------|
| Description | 19" patch panel CAT6 surge protector for Data-Telecom lines | 19" patch panel surge protector - POE-A line | 19" patch panel surge protector - POE-B line | 19" patch panel surge protector - Telecom line | |
| Network | 100/1000/10G BaseT, RS422, RS485, RS423, Ethernet | POE mode A, Gigabit ethernet, POE Plus | POE mode B, Gigabit Ethernet, POE Plus | Telephone line, ADSL | |
| Max. data rate | 10 Gbps | 1000 Mbps | 1000 Mbps | 40 Mbps | |
| SPD configuration | 12, 24 or 48 ports with 8 wires | 12, 24 or 48 ports with 8 wires | 12, 24 or 48 ports with 8 wires | 12 ports of 8 wires | |
| Pin outs | {1-2}{3-6}{4-5}{7-8} | {1-2}{3-6}{4-5}{7-8} | {1-2}{3-6}{4-5}{7-8} | {1-2}{3-6}{4-5}{7-8} | |
| Nominal line voltage | Un 5 vdc | 48 Vdc | 5 Vdc/48 Vdc | 200 vdc | |
| Max. DC operating voltage | Uc 7.5 Vdc | 60 Vdc | Pin 1.2.3.6 : 7.5 Vdc - Pin 4.5.7.8 : 60 Vdc | 240 Vdc | |
| Max. Load current | IL 750 mA | 750 mA | 750 mA | 750 mA | |
| Max. frequency | f max 250 MHz | > 100 MHz | > 100 MHz | > 100 MHz | |
| Insertion loss | < 1 dB | < 1 dB | < 1 dB | < 1 dB | |
| Line/Ground Nominal discharge current | In 500 A | 250 A | 600 A/250 A | 351 A | |
| Nominal discharge current Line/Line | In 500 A | 250 A | 600 A/250 A | 350 A | |
| Protection level | Up 20 V | 20 V | 20 V/ 80 V | 300 V | |
| Failsafe behavior | Short-circuit | Short-circuit | Short-circuit | Short-circuit | |
| Mechanical characteristics | | | | | |
| Dimensions | see diagram | | | | |
| Format | Rack 19" | | | | |
| Connection to Network | Self-stripping connector 110 back/RJ45 female. front | | | | |
| Disconnection indicator | transmission interrupt - default mode 2 | | | | |
| Spare unit | removable circuit 2 ports | | | | |
| Mounting | Baie 19" | | | | |
| Operating temperature | -40/+85°C | | | | |
| Protection rating | IP20 | | | | |
| Housing material | Aluminium | | | | |
| Standards compliance | IEC 61643-21 / EN 61643-21 / UL497B (surge) IEEE 802-3an (transmission) | | | IEC 61643-21 / EN 61643-21 / UL497B | |
| Part number | | | | | |
| 12-port version | PCH12-C6 | 6249 | PCH12-POE-A 6273 | PCH12-POE-B 6276 | PCH12-RJ45-G 6350 |
| 24-port version | PCH24-C6 | 6251 | PCH24-POE-A 6274 | PCH24-POE-B 6277 | on request - |
| 48-port version | PCH48-C6 | 6252 | PCH48-POE-A 6275 | PCH48-POE-B 6278 | on request - |

* : 12, 24 or 48-port

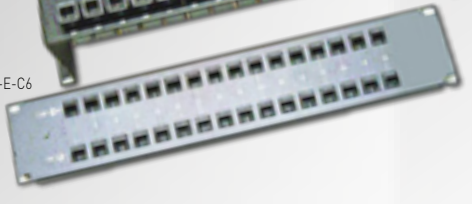


19" patch panel surge protector for high-speed network RAK series

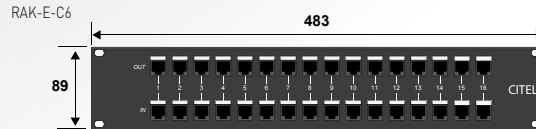
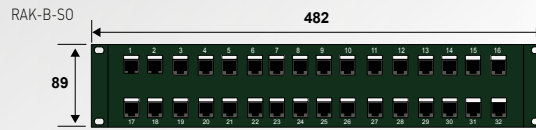
RAK-B-S0



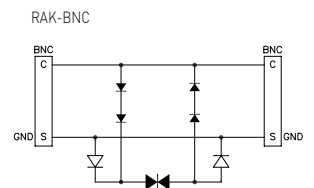
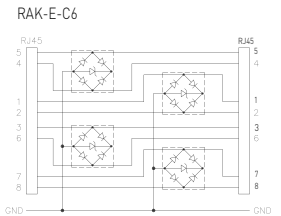
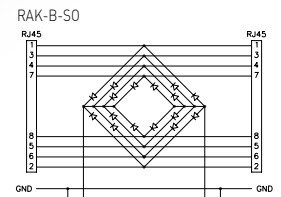
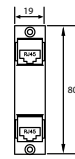
RAK-E-C6



RAK-BNC



Surge protector circuit 1 line



- 19" Rack mounted or stand off
- 16 or 32 ports
- In/out front : RJ45, BNC
- Available for Telecom and Ethernet networks
- Possible maintenance per line
- Secondary protection
- IEC 61643-21 and UL497B compliance

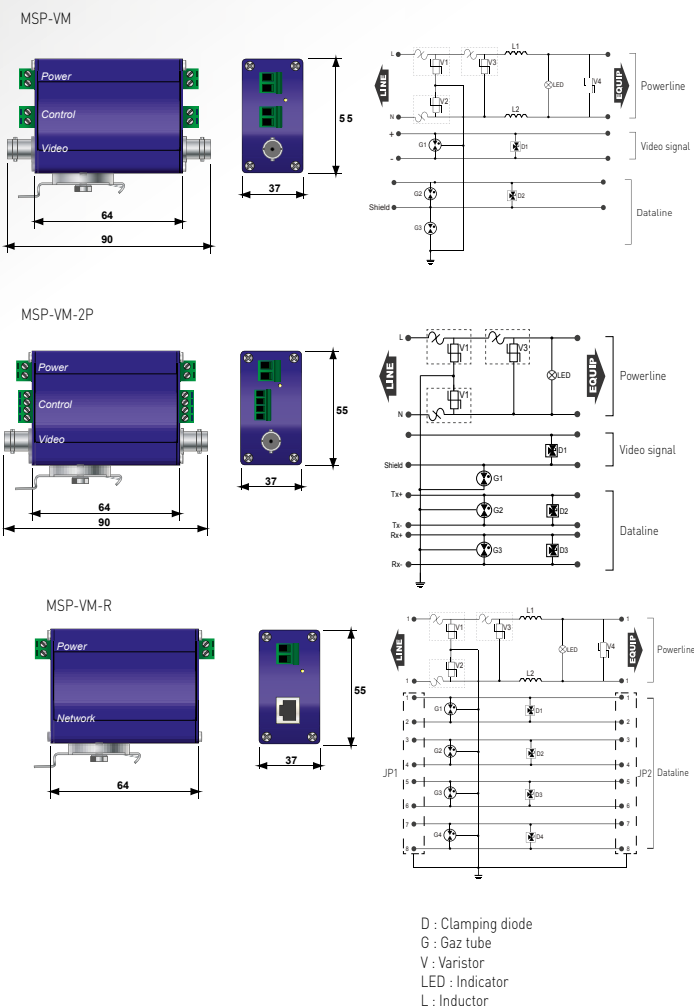
Characteristics

| CITEL Model | RAK*-E-C6 | RAK*-POE-A | RAK*-POE-B | RAK16-BNC | | | | |
|--|--|--|---|--------------------------|----------------|------------|-----------|------|
| Description | 19" patch panel surge protector for high-speed network | | | | | | | |
| Network | 100/1000/10G BaseT, RS422, RS485, RS423, Ethernet | POE mode A, Gigabit Ethernet, POE Plus | POE mode B, Gigabit Ethernet, POE Plus | Video | | | | |
| Max. data rate | 10 Gbps | 1000 Mbps | 1000 Mbps | 1000 Mbps | | | | |
| SPD configuration | 16 ou 32 ports de 8 fils | 16 ou 32 ports de 8 fils | 16 ou 32 ports de 8 fils | 16 ports BNC | | | | |
| Pin outs | (1-2)(3-6)(4-5)(7-8) | (1-2)(3-6)(4-5)(7-8) | (1-2)(3-6)(4-5)(7-8) | - | | | | |
| Nominal line voltage | Un 5 Vdc | 48 Vdc | 5 Vdc/48 Vdc | 5 Vdc | | | | |
| Max. DC operating voltage | Uc 7.5 Vdc | 60 Vdc | Pin 1.2.3.6 : 7.5Vdc Pin 4.5.7.8 : 60 Vdc | 7.5 Vdc | | | | |
| Max. Load current | IL 750 mA | 750 mA | 750 mA | 750 mA | | | | |
| Max. frequency | fmax 250 MHz | > 100 MHz | > 100 MHz | > 100 MHz | | | | |
| Insertion loss | < 1 dB | < 1 dB | < 1 dB | < 1 dB | | | | |
| Line/Ground Nominal discharge current <i>8/20µs Test x 10 - C2 category</i> | In 500 A | 250 A | 600 A/250 A | 600 A | | | | |
| Nominal discharge current Line/Line <i>8/20µs Test x 10 - C2 category</i> | In 500 A | 250 A | 600 A/250 A | 600 A | | | | |
| Protection level | Up 20 V | 80 V | 20V/80 V | 20 V | | | | |
| Failsafe behavior | Short-circuit | Short-circuit | Short-circuit | Short-circuit | | | | |
| Mechanical characteristics | | | | | | | | |
| Dimensions | see diagram | | | | | | | |
| Format | Rack 19" | | | | | | | |
| Connection to Network | RJ45 female input/output | | | RJ45 female input/output | | | | |
| Disconnection indicator | transmission interrupt - default mode 2 | | | | | | | |
| Spare unit | removable circuit 1 line | | | without | | | | |
| Mounting | 19" rack or wall mounted (version S0) | | | | | | | |
| Operating temperature | -40/+85°C | | | | | | | |
| Protection rating | IP20 | | | | | | | |
| Housing material | Aluminium | | | | | | | |
| Standards compliance | IEC 61643-21 / EN 61643-21 / UL497B / IEEC 802-3an | | IEC 61643-21 / EN 61643-21 / UL497 B / IEEE 802-3at | | | | | |
| Part number | | | | | | | | |
| 16-port version | RAK16-E-C6 | 6254 | RAK16-POE-A | 6372 | RAK16-POE-B | 6256 | RAK16-BNC | 6253 |
| 32-port version | RAK32-E-C6 | 891103 | RAK32-POE-A | on request | RAK32-POE-B | on request | - | - |
| 16-port version stand-off | RAK16-E-C6-S0 | 891102 | RAK16-POE-A-S0 | 6282 | RAK16-POE-B-S0 | 6285 | - | - |
| 32-port version stand-off | RAK32-E-C6-S0 | 6257 | RAK32-POE-A-S0 | 891104 | RAK32-POE-B-S0 | 891105 | - | - |

* : 16 or 32-port

Surge protector for Video Survey Camera

MSP-VM series

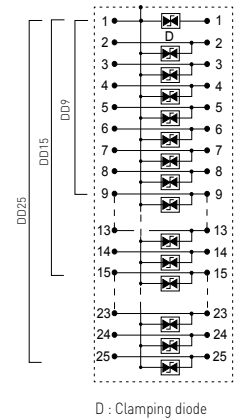
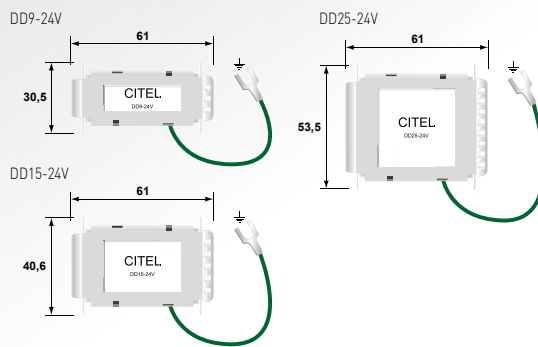


Characteristics

| CITEL Model | MSP-VM Range | | |
|--|--|-------------------------------|------------------------------|
| | MSP-VM12 | MSP-VM24 | MSP-VM230 |
| Description | Surge protector for video survey camera Power/Data/Video | | |
| AC power specifications | | | |
| Network | 12 Vac/Vdc | 24 Vac/Vdc | 230 V single phase |
| AC system | - | - | TT-TN |
| Protection mode(s) | CM/DM | CM/DM | CM/DM |
| Max. DC operating voltage | Uc 15 Vac/Vdc | 30 Vac/Vdc | 255 Vdc |
| Max. Load current | IL 5 A | 5 A | 5 A |
| Residual current - Leakage current at Uc | Ic None | None | None |
| Nominal discharge current | In 5 kA | 5 kA | 5 kA |
| Max. discharge current -max. withstand @ 8/20 μ s by pole | I _{max} 10 kA | 10 kA | 10 kA |
| Withstand on Combination waveform - Class III test | Uoc 10 kV/5 kA | 10 kV/5 kA | 10 kV/5 kA |
| Protection level | Up 0.22 kV | 0.22 kV | 1.2 kV |
| Disconnection indicator | Green LED OFF and line cut-off | | |
| Connection to Network | screw terminal 2.5 mm ² max | | |
| Standards compliance | IEC 61643-11 / EN 61643-11 / UL1449 ed.4 | | |
| Dataline specifications | | | |
| Network | 1 pair signal 0-5 V 8 Vdc | 1 paire signal 0-5 V 8 Vdc | 1 pair signal 0-5 V 8 Vdc |
| Max. DC operating voltage | Uc 8 Vdc | 8 Vdc | 8 Vdc |
| Max. Load current | IL 300 mA | 300 mA | 300 mA |
| Max. frequency | f max 10 MHz | 10 MHz | 16 MHz |
| Insertion loss | < 1dB | < 1dB | < 1dB |
| Nominal discharge current | In 2.5 kA | 2.5 kA | 2.5 kA |
| Max. discharge current -max. withstand @ 8/20 μ s by pole | I _{max} 5 kA | 5 kA | 5 kA |
| Protection level | Up 20 V | 20 V | 20 V |
| Disconnection indicator | interruption of transmission - default mode 2 | | |
| Connection to Network | screw terminal 1.5 mm ² max | | |
| Standards compliance | IEC 61643-21 / EN 61643-21 | | |
| Video line specifications | | | |
| Network | signal video | signal video | signal video |
| Max. DC operating voltage | Uc 6 Vdc | 6 Vdc | 6 Vdc |
| Max. Load current | IL 300 mA | 300 mA | 300 mA |
| Max. frequency | f max 100 MHz | 100 MHz | 100 MHz |
| Insertion loss | < 1dB | < 1dB | < 1dB |
| Nominal discharge current | In 5 kA | 5 kA | 5 kA |
| Max. discharge current -max. withstand @ 8/20 μ s by pole | I _{max} 10 kA | 10 kA | 10 kA |
| Protection level | Up 20 V | 20 V | 20 V |
| Disconnection indicator | interruption of transmission - default mode 2 | | |
| Connection to Network | connector BNC female | | |
| Standards compliance | IEC 61643-21 / EN 61643-21 | | |
| Mechanical characteristics | | | |
| Dimensions | see diagram | | |
| Mounting | DIN rail or plate (flange) | | |
| Operating temperature | -40/+85°C | | |
| Protection rating | IP20 | | |
| Housing material | anodized aluminum | | |
| Part number | 420403 | 420402 | 420401 |

D-Sub Dataline Surge Protector

DD series



- “D-Sub” surge protectors
- For RS232, RS422, RS485 communication lines
- Fast and easy installation
- 9, 15 and 25-pin connectors
- Secondary protection
- IEC 61643-21, EN 61643-21 and UL497B compliance

Characteristics

| CITEL Model | DD*-24V | DD*-6V | | |
|--|---|-------------------------------------|---------|--------|
| Description | D-sub dataline surge protector | D-sub dataline surge protector | | |
| Network | RS232, RS485, 4-20mA | RS422, RS423 | | |
| Max. data rate | < 40 Mbps | < 40 Mbps | | |
| SPD configuration | 9, 15 or 25-pin connector | 9, 15 or 25-pin connector | | |
| Pin outs | all wires transmitted and protected | all wires transmitted and protected | | |
| Nominal line voltage | Un 12 Vdc | 5 Vdc | | |
| Max. DC operating voltage | Uc 15 V | 6 V | | |
| Max. Load current | IL 750 mA | 750 mA | | |
| Max. frequency | f max > 10 MHz | > 10 MHz | | |
| Insertion loss | < 1 dB | < 1 dB | | |
| Line/Ground Nominal discharge current <i>8/20µs Test x 10 - C2 category</i> | In 300 A | 400 A | | |
| Line/Line Nominal discharge current <i>8/20µs Test x 10 - C2 category</i> | In 300 A | 400 A | | |
| Protection level | Up 18 V | 7.5 V | | |
| Failsafe behavior | Short-circuit | Short-circuit | | |
| Mechanical characteristics | | | | |
| Dimensions | see diagram | | | |
| Mounting | in/out D-Sub connector unit | | | |
| Disconnection indicator | transmission interrupt - default mode 2 | | | |
| Mounting | on cable | | | |
| Operating temperature | -40/+85°C | | | |
| Protection rating | IP20 | | | |
| Housing material | Thermoplastic UL94-V0 | | | |
| Standards compliance | IEC 61643-21 / EN 61643-21 / UL497B | | | |
| Part number | | | | |
| 25-pin connector male/famelle | DD25-24V | 6145 | DD25-6V | 891725 |
| 15-pin connector male/famelle | DD15-24V | 6214 | DD15-6V | 6144 |
| 9-pin connector male/famelle | DD9-24V | 6147 | DD9-6V | 6148 |

* : 9, 15 or 25-pin

Coaxial surge protector for video transmission networks CXC and CNP

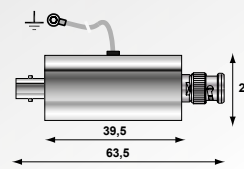


CXC06-B/MF

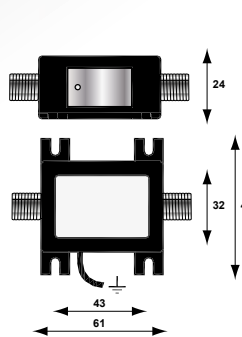


CNP06-B/FM

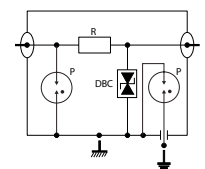
CXC06-B/MF



CNP06-F/FF



CXC / CNP06



P : 2-electrode gas tube
DBC : Low capacitance diode
R : Resistor

- Coaxial surge protector
- Multiples connectors
- Low insertion loss
- Easy installation
- IEC 61643-21, EN 61643-21 and UL497C/E compliance

Characteristics

| CITEL Model | CXC06* | CNP06* | | |
|--|---|---|------------|--------|
| Description | Coaxial surge protector for video transmission networks | Coaxial surge protector for video transmission networks | | |
| Technology | GDT + Diode | GDT + Diode | | |
| Max. frequency | f DC - 100 MHz | DC - 100 MHz | | |
| Max Power | P 6 W | 4 W | | |
| Impedance | Z 50/75 ohms | 50/75 ohms | | |
| Insertion loss | ≤ 0.5 dB | ≤ 0.5 dB | | |
| Return loss | ≥ 20 dB | > 20 dB | | |
| VSWR | < 1.3:1 | < 1.3:1 | | |
| Max. Load current | IL 0.5 A | 0.5 A | | |
| Nominal discharge current - 8/20µs Test x 10 - C2 Category | In 5 kA | 5 kA | | |
| Max. discharge current - max. withstand @ 8/20 µs by pole | I _{max} 10 kA | 20 kA | | |
| Impulse current - 2 x 10/350µs Test - D1 Category | I _{imp} 2.5 kA | 2.5 kA | | |
| Protection level | Up 20 V | 20 V | | |
| Failsafe behavior | short-circuit | short-circuit | | |
| Mechanical characteristics | | | | |
| Dimensions | see diagram | | | |
| Connection to Network | BNC or F connector | | | |
| Disconnection indicator | transmission interrupt - default mode 2 | | | |
| Mounting | on cable | on plate | | |
| Operating temperature | -40/+85°C | | | |
| Protection rating | IP20 | | | |
| Housing material | Brass | Metal+plastic | | |
| Standards compliance | IEC 61643-21 / EN 61643-21 / UL497C / UL497E | | | |
| Part number | | | | |
| BNC connector Female/Male | CXC06-B/FM | 6301341 | CNP06-B/FM | 64270 |
| BNC connector Male/Female | CXC06-B/MF | 630134 | CNP06-B/MF | 632611 |
| F connector Female/Female | - | - | CNP06-F/FF | 632602 |
| F connector F Male/Female | - | - | CNP06-F/MF | 632601 |

* : BNC or F, Male/Female or Female/Femelle connector

