



OVERVOLTAGE PROTECTION

from KRONE

Protect before Effect

In the world of living and business, communication network links people and business together from various location throughout the world at the present time. High technological equipment have been developed to serve with the business tide and customers' need to reach and provide better efficiency and effectiveness. Microelectronics are the heart of all business and services which function and move the world to the future.

The trend toward increasing investment at the workplace in the technical equipment for data processing and other communication system can result in substantial losses when the equipment is destroyed as a result of abnormal electrical surges. Apart from material and equipment loss, there is a risk of personal injury for users and maintenance personnel of installations and network. It is too often that users suddenly realise that even small excess voltage have caused unforeseeable damage.

From studying, causes of damage or excess voltage on communication networks can be classified to 4 major areas as follows.

Lightning strike (Electrostatic Discharge)

Indirect Lightning Strike (Electro Magnetic Coupling)

Magnetic Disturbance between Power Line

Short Circuit

All of those causes of damage are uncontrollable factors due to the power of nature which is always awesome and dangerous. Characteristic of excess voltage which takes place on communication line or network can be described in two forms; overvoltage and overcurrent

Protection systems for communication networks have been invented and developed by many telecommunication companies. Even the cost of protection system installation seems to be a barrier but it is incomparable to the lost of network reliability and maintenance cost. This investment is proven worth spending.





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KRONE is the world leader in telecommunications from Germany. Protection system in communication network from KRONE is designed to cover wide range of requirement to ensure that networks are operated more safely and economically. To protect electronic networks from damage caused by excess voltage, KRONE has developed the ComProtect family especially for systems in the telecommunications, data processing, measuring technology and process control engineering.

Protection circuits absorb external electrical disturbances, reducing them to an acceptable voltage level and then leading the resulting disturbing currents directly to earth. This provides reliable protection for maintenance personnel and electrical devices that are at the interfaces of the network. Before an electric load can destroy the protection circuits or the risk of fires arises, a short circuit is triggered in the protection plug. As the requirements of equipment differ, it is important to adapt overvoltage protection devices to regional and local requirements.

In order to select the protection system, the requirements for the protection system must be examined together with the operating conditions. Installation takes place after distribution equipment has been set up. Moreover, there are several conditions that have to be taken into account before selecting and setting up protection system.

Protection system from KRONE provides high feasibility by covering various level of circuit in communication network. The overvoltage protection components are entirely based on the same working principal: any excessive voltages which may occur are discharged to earth. In general, protection components for overvoltage and overcurrent are composed of major parts which could be called as voltage limiting devices and currents limiting devices as follows

Overvoltage arrester or Gas Discharge Tube (GDT)

Varistors or Thyristor Diodes (VDRs)

PTC Resistors



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KRONE supplies various types of protective circuits as follows;

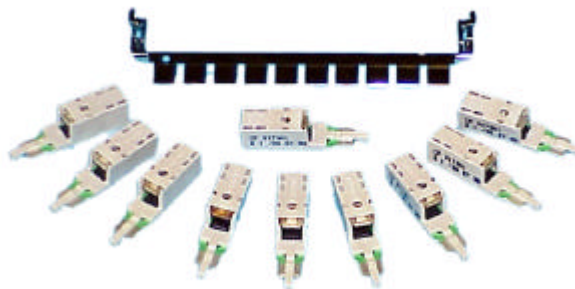
3-point protection: protect telecom network from excess voltage (high voltage or secondary protection)

5-point protection: protect telecom network from excess voltage and current protection

Graded 5-point protection: The state-of-the-art by KRONE; the world's only maintenance free protection device

In line with signal potentials, a distinction is made between 3-point and 5-point protection. In the case of connection modules, only 3-point protection is possible. 5-point protection (components in the signal path) are basically recommended for switching modules because - once the protective plug has been removed-the contact in the module is released, so that possible faults cannot make their way to the downstream network.

An installed overvoltage protection system will reduce rate the of human injury from damaged equipment, loss of data, communication network downtime, repair and maintenance cost. ComProtect is an important alternative which provides high efficiency, safety and productivity. Don't forget to protect your network before getting an effect from serious unforeseeable damage.



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Technical Data					
Typ: 2/1CP	BI70A1	BI180A1	BC180A1	BOD180A1	UNIT
Max operating voltage (a/b-e, a-b)	70	180	180	180	V
Max. operating current (a-a/b-b) @25°	90	120	120	90	ma
DC spark overvoltage arrester @100V/s (a/b-e)	90	230	230	500	V±20%
Max. output voltage @1kV/μs (a/b-e, a-e)	<190	<350	<450	<400	V
Nominal arrester surge current (8/20us; a/b-e)	5	5	5	5	ka
Nominal arrester alt. discharge current (50Hz, 1s; a/b-e)	5	5	5	5	a _{rms}
Insulation resistance arrester @ 100V DC	>1000	>1000	>1000	>1000	MΩ
Nominal De-coupling resistance (a-a'/b-b') @ 25°C	25	10	10	20	Ω±20%
Max. trip current PTC @ V _{ma} =230V _{rms}	2,5	1	1	4	a _{rms}
Capacitance (1MHz/1V _{rms} ; a/b-e, a-b)	50	50	50	50	pF
Typ. Fail-safe response time @ 5A _{rms} (a+b+e)	<5	<5	<5	<5	s
Leakage current diode @ 100V	<10	<5	<10	<5	μA
Typ. operating frequency (-3dB, Z ₀ =600Ω)	8	8	8	8	MHz
Dielectric Strength (1,2/50μs;3x)	1,75	1,75	1,75	1,75	kV
Operating temperature: -20°C...+60°C Storage temperature: -40°C...80°C Electrical characteristics: acc. To CCITT Vol IX K 12/IEC 512-2 Test 2a Mechanical characteristics: sinusodial wave acc. To IEC 68-2-6 Climatical characteristics: DIN IEC 68 Teil 2-2/3 (thermal resistivity) DIN IEC 68 Teil 2-1 (cold resistivity)					

Ordering information:	
(for 1 set (10pcs with earth bar 2/10))	
ComProtect 2/1 CP BI 12A1	ordering. Code 5909 1 084-00
ComProtect 2/1 CP BI 24A1	ordering. Code 5909 1 083-00
ComProtect 2/1 CP BI 70A1	ordering. Code 5909 1 082-00
ComProtect 2/1 CP BOD 180A1	ordering. Code 5909 1 076-00
ComProtect 2/1 CP BOD 190	ordering. Code 5909 1 178-40
HIGHBAND 10 HBP 1210 A1	ordering. Code 7042 1 002-00
Accessories:	
Earth bar 2/10	ordering. Code 5909 3 041-00
Earth bar 2/8	ordering. Code 5909 3 042-00
Earth clip, set, 20 pcs	ordering. Code 6089 2 122-00

