

## SUBSCRIBER PROTECTION BOX PK1-OVP3

**PK1-OVP3** is a protection box designed for connection of telecommunication line with subscriber installation. It provides protection of all subscriber devices connected from overvoltage and overcurrent generated by atmospheric discharges, electromagnetic induction of nearby power installation and cross-contact between telecommunication and power cable. This protection is realised with 5-pole module for serial connection on telecommunication lines (e.g. telephone pairs). Two poles are connected on line (cable) side, the other two on subscriber equipment side and the fifth pole is grounded. This module provides two-stage overvoltage protection: coarse protection using three-pole **Gas Discharge Tubes (GDT)** with fail-safe clip, and hyper-fine protection with thyristor diodes. Overcurrent protection is realised by **Positive Temperature Coefficient (PTC)** thermistor. Following the appearance of surge hyper-fine overvoltage protection reacts first, (response time less than 1 ns) limiting overvoltage. After a few milliseconds PTC starts limiting overcurrent, especially in case of cross-contact between telecommunication and power distribution cable, operating as a resettable fuse. Resetability can be provided after more than 24 hours of cross connection with  $I=23$  A, if necessary. That means **PK1-OVP3** is completely self-maintaining protection according to required tests in ITU-T K.20 and K.21 Recommendations.

This configuration is recommended for protection of new generation equipment (such as fax machine, wireless phone, modem etc).



### PK1-OVP3 TECHNICAL SPECIFICATIONS

Protection type		Overvoltage and overcurrent
DC spark-over voltage		230 V
Impulse discharge current (8/20 $\mu$ s)	nominal	5 kA
	maximal	10 kA
Surge response voltage (10/700 $\mu$ s, $U_p=4$ kV)		200÷240 V peak
Hold-on current		145 mA
Line resistance		3÷6 $\Omega$
Typical trip time ( $U_{ac}=230$ V, 50 Hz, $T=900$ s)	$R_f=600$ $\Omega$	$I_f=0,383$ A
	$R_s=200$ $\Omega$	$I_s=1,15$ A
	$R_n=10$ $\Omega$	$I_n=23$ A
Insulation resistance		$> 10^{10}$ $\Omega$
Contact resistance (with module)		$< 15$ m $\Omega$
Response time		$< 1$ ns
Signal attenuation		$< 0,5$ dB
Number of protected telecommunication lines		1
Housing		polycarbonate reinforced black UL94 -V0
Recommendations		ITU-T K.20, K.21, K.30

PK1-OVP3.doc