



## HIGH VOLTAGE PROTECTION

### General Description

VoltCare™ is design to trims voltage wave and loads remaining excess energy to itself and turns this high voltage energy to heat energy in itself and doesn't let them enter into devices or systems.

VoltCare™ is low voltage lightning arrester without discharge grounding line.

### Features

VoltCare™;

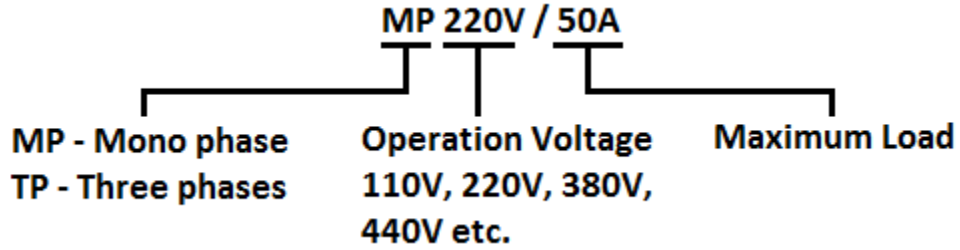
- IS MAINTENANCE FREE  
VoltCare doesn't have any mechanical part that needs maintenance.
- HAS 10 TO 25 NANO-SECONDS PRECISION  
VoltCare doesn't have any mechanical part; it works with electrical card in it. Harmful peak duration is about 2-10 milliseconds, but VoltCare has 0.01 milliseconds (10 nanoseconds) work precision.
- HAS NO ENERGY CONSUMPTION  
VoltCare will be connected to the system by parallel connection and it works passive.
- IS NOT DISPOSABLE  
Its lifetime is depends on total over voltage energy that it turns into heating energy. Its design can stand thousands of voltage peak and harmonics in your grid circuit. If its lifetime expires, it activates fuses, interrupts the current and prevents uncontrolled energy input.  
When you remove and/or changed it with new one, your system and devices will continue to work.
- DOESN'T NEED ANY OTHER EQUIPMENTS  
No need to change anything. No need any other equipment such as independent discharge grounding line etc.
- IS A PERFECT INTERIOR LIGHTNING PROTECTION  
Whether you have external lightning protection or not, VoltCare makes perfect interior lightning protection by connecting your devices and electrical grid.
- REQUIRES VERY LITTLE MOUNTING SPACE, AND ARE OFFERED STANDARD 35MM RAIL

- EASY INSTALLATION  
VoltCare can be installed in a few minutes as shown in Connection Diagrams part. VoltCare perfectly fits to standard circuit panels and just needs parallel connection.
- IS LEAD-FREE, HALOGEN-FREE AND ROHS COMPLIANT
- HAS WIDE OPERATING VOLTAGE RANGE V M(AC)RMS 110V TO 440V
- HAS NO DERATING UP TO 85°C AMBIENT
- IS NONFLAMMABLE  
HOUSING MATERIAL is ABS, UL'94 V0 Inflammability Standard.  
And all surface of electronic card is covered with special inflammable epoxy resin.

## General technical data

SPECS	EXPLANATION
Activation	+40V
IEC Category	Class I+II+III
Nominal Voltage UN	230 V AC (230/400 V AC – 275/420 V AC) , 420 V AC (L-L)
Arrestor Nominal Voltage	UC (L-N)275 V AC , UC (L-PE)275 V AC
UT (TOV-proof)	15kV, 6kA AC (8/20 µs)(L-L,L-N,L-PE)
Nominal Frequency Fn	50 Hz – 60 Hz
Nominal Load Current IL	1000 A (4×2.5mm <sup>2</sup> )
Ground Conductive Current IPE	1 µA (Ground Current IPE)
Power Consumption	0
Maximum discharge current I <sub>max</sub> (L-N), (L-PE)	Max 10 nanoseconds , No Discharge
Nominal discharge current I <sub>n</sub> (L-N), (L – PE)	10 nanoseconds , No Discharge
6kV 50 ns (L-N) Surge Working Voltage	+40V
Activation Time (L-L) , (L-N) , (L-PE)	10 nanoseconds
Maximum Circuit Breaker Needed for Branch and K-Type	1000 A(gL/gG)
(Active) IP Short Circuit Resistance with Maximum Circuit Breaker	1000 kA
Number of Poles	2 pcs. (3 Phases + Neutral) 4 pcs. (3 Phases + Neutral)
Ground Connection	Yes
Inlet Connection	Screwed Connector
Outlet Connection	None
Screw	M5, Torque: 4,5Nm
Multicore and Single Core Conductor Profile	Min. 2,5 mm <sup>2</sup> , Max 4 mm <sup>2</sup>
Standards/Directives	IEC 61643-1 2005 , DIN EN 61643-11 2002 , DIN EN 61643-11/A11 2007 , IEC 61643-1
Protection Class	IP20
Housing Material	ABS, UL'94 V0 Inflammability Standard
Standards for Diffusion Distance	DIN VDE 0110-1 , IEC 60664-1
Installation Type, Design	DIN 35mm Tray
Ambient Temperature	-50 °C, +80 °C
Measurement	50 x 75 x 50mm

## Ordering Code:



## Maximum ratings (TA= 85 °C)

	V <sub>RMS</sub> V	V <sub>DC</sub> V	i <sub>max</sub> 8/20μs A	W <sub>max</sub> (2ms) J	P <sub>max</sub> W
MP110V/..	115	150	6500	60,0	1
MP220V/..	250	320	8000	140,0	1
TP380V/..	420	560	8000	175,0	1
TP440V/..	460	615	8000	195,0	1

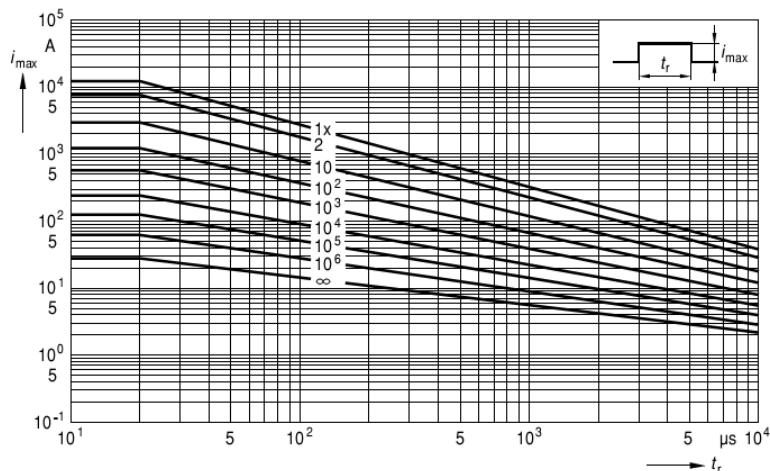
## Characteristics (TA= 25 °C)

	V <sub>V</sub> (1 mA) V	ΔV <sub>V</sub> (1 mA) %	Max. clamping voltage v V	C <sub>typ</sub> (1 kHz) pF
MP110V/..	180	±10	300	1520
MP220V/..	390	±10	650	700
TP380V/..	680	±10	1120	420
TP440V/..	750	±10	1240	380

## Maximum surge current

$i_{max} = f(t_r, \text{pulse train})$

**MP110V series**

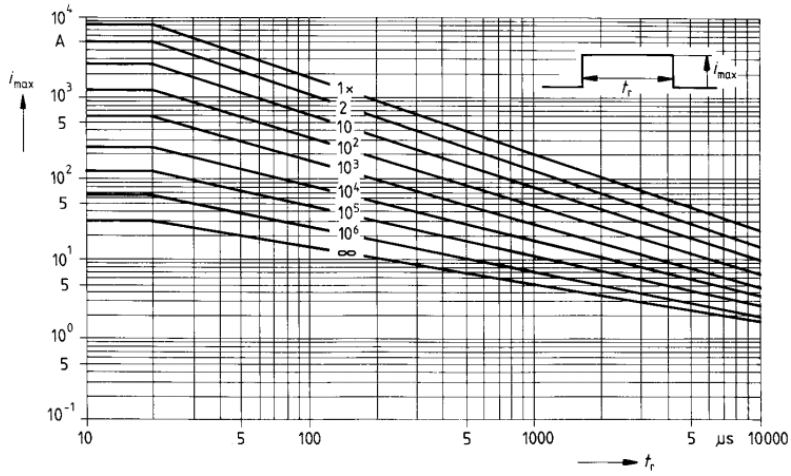


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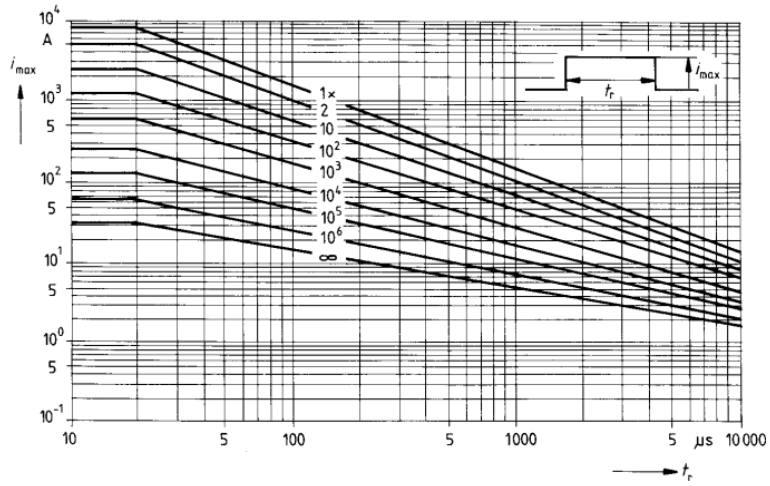
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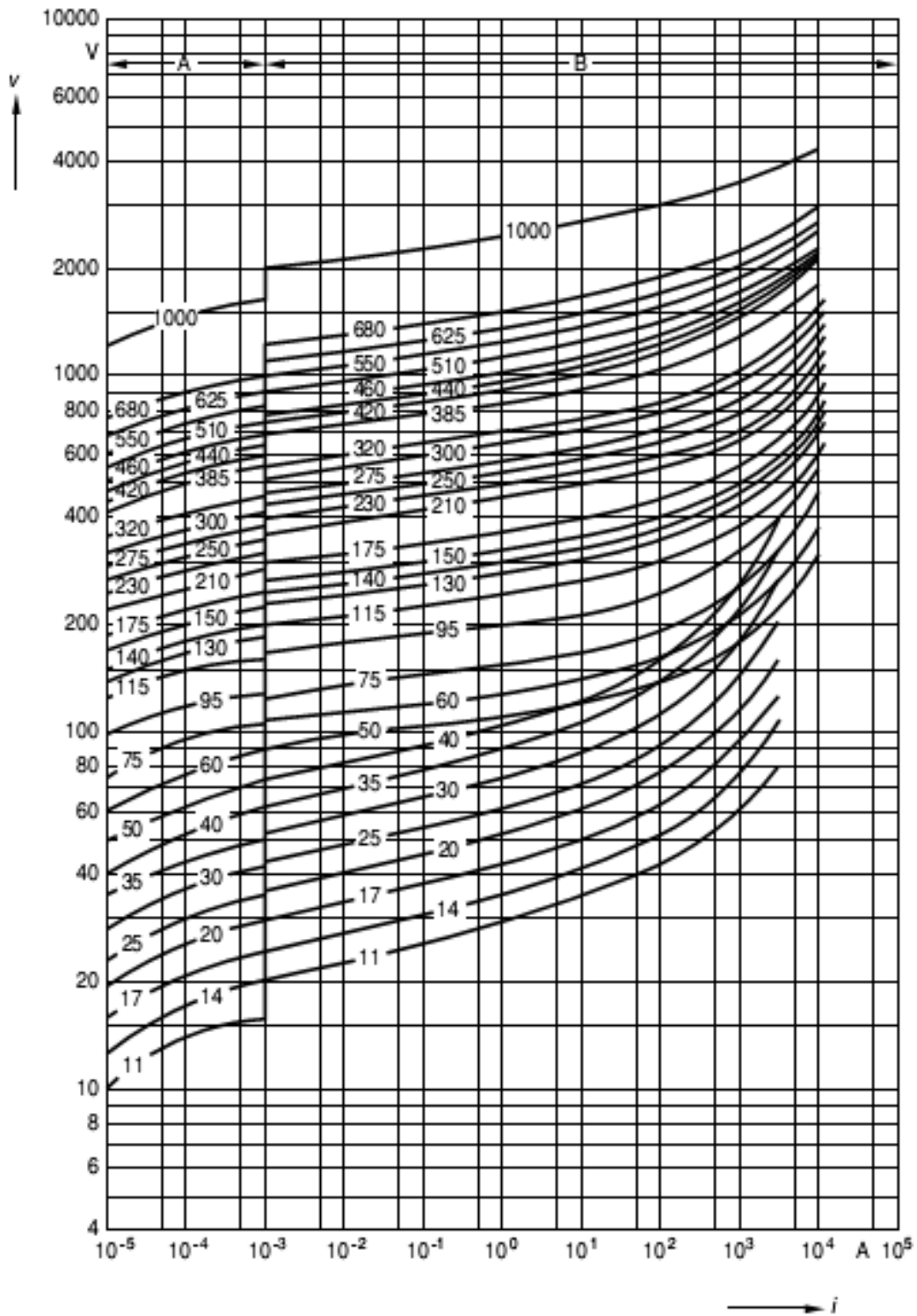
**MP220V series**



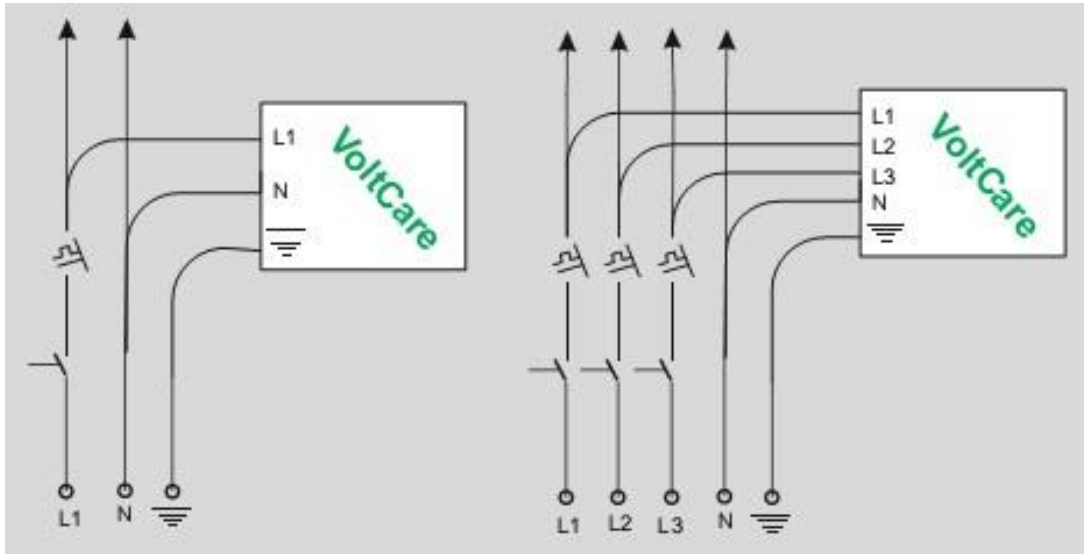
**TP380V and TP440V series**



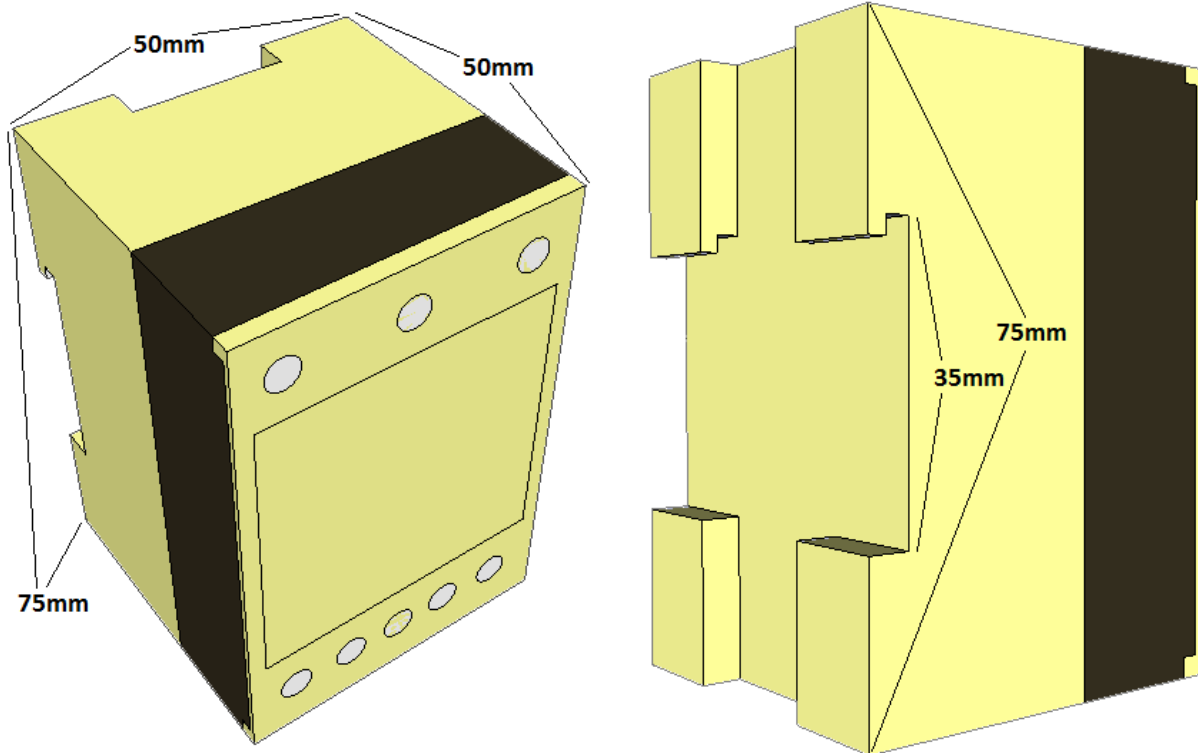
$v = f(i)$  A = Leakage current B = Protection level  
 (for worst-case VoltCare tolerances)



## Connection Diagrams



## Physical Dimensions



## LIFE SUPPORT POLICY

VoltCare™ PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF PLASTURKO SEMICONDUCTOR CORPORATION.

VoltCare™ PERFECTLY PROTECTS YOUR DEVICES. BUT WHEN ITS LIFETIME EXPIRES, IT ACTIVATES FUSES, INTERRUPTS THE CURRENT AND PREVENTS UNCONTROLLED ENERGY INPUT. YOU MUST REMOVE OR REPLACE VoltCare™. SO, YOU MUST HAVE ADDITIONAL POWER SOURCE AFTER VoltCare™ (UPS OR BATTERY ETC.) TO GAIN TIME TO REMOVE OR TO REPLACE VoltCare™.

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The information contained in this brochure describes the type of component and shall not be considered as guaranteed characteristics.

This brochure replaces the previous edition.

For questions on technology, prices and delivery please visit [www.voltcare.net](http://www.voltcare.net) and contact with the authorized sales contacts.

