

Metal Oxide Resistor



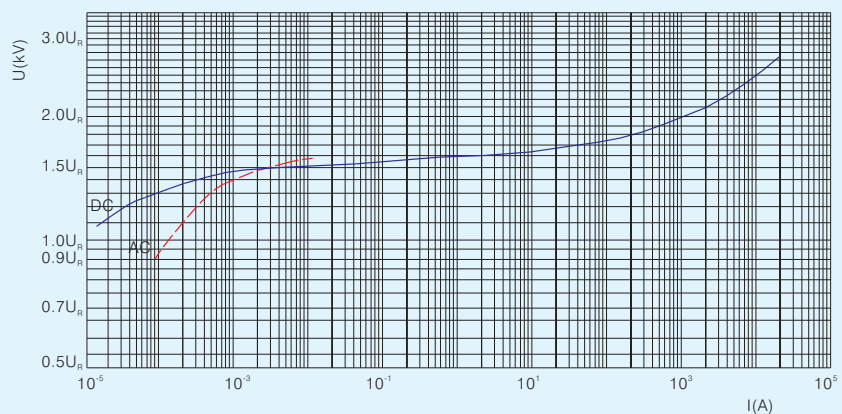
1 General

As the core part of surge arrester, metal oxide resistor is made according to the following procedure: add a little bismuth oxide, cobalt oxide, chromium oxide, manganese carbonate, stibium oxide and other microcrystalline additives to the main component-zinc oxide and then burn in high temperature at 1200°C.

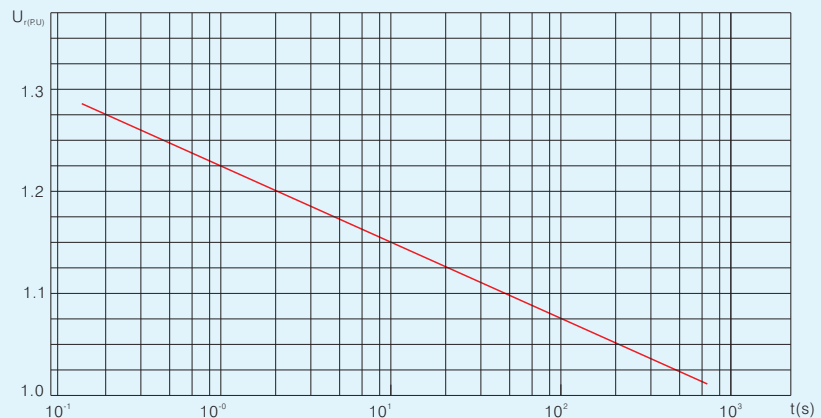
Metal oxide resistor mainly consists of zinc oxide grain, crystal boundary layer and spinel. It's generally considered that zinc grain has better conductivity; the voltage upon zinc oxide grain nearly totally affect on high resistant crystal layer(taking bismuth oxide as main component). Spinel, as the component oxide made up of zinc oxide and stibium oxide distributions in the crystal boundary layer to limit the growing of zinc oxide grain and make resistor of better nonlinear characteristics.

CHINT metal oxide resistor features flat v-t characteristics curves within large current range and superior nonlinear. It also features for excellent over voltage protection level due to its low residual voltage and large current passing capacity and is widely used in all kinds of surge arresters to absorb the energy in over voltage system.

V-I characteristics of metal oxide resistor



Power frequency over-voltage withstand time characteristics of metal oxide resistor



Supplementary Components

2 Technical Parameter of Metal Oxide Resistor

Model	Diameter ± 0.8 mm	Thickness ± 0.5 mm	Rated voltage (kV _{r.m.s})	Nominal discharge current kA	8/20 μ s Lightning impulse residual voltage ($\leq kV_p$)	2ms square wave impulse current withstands, eighteen times A	4/10 μ s high current impulse withstands, twice kA
D3	35	22	3	5	9.0	150	65
D4	42	22	3	10	9.0	250	100
	46	22	3	10	9.0	400	100
D5	53	22	3	10	9.0	600	100
D6	62	22	3	10	9.0	800	100
D7	71	22	3	10	9.0	1000	100
D11	115	22.5	3	20	8.0	2000	100