TYPES OF RAIL GAP SWITCHES MANUFACTURED BOTH ISOTOPE & NON ISOTOPE BASED

MODEL	SELF BREAKDOWN VOLTAGE IN K.V.D.C	MAX. PEAK CURRENT	ELECTRODE LENGTH	GAS	ELECTRODE DIAMETER
ZE/RG/101/AM	20 TO 120	750 KA	305 m.m.	N_2	50 mm
ZE/RG/102/AM /Z/ MOD-4	20 TO 120	1 MA	305 m.m.	N_2	50 mm
ZE/RG/MOD -3	20 TO 70	750 KA	305 m.m.	N_2	35 mm
ZE/RG/MOD-2	20 TO 50	500 KA	305 m.m.	N_2	25 mm
ZE/RG/600/AM MOD - 5	10 TO 40	1 MA	600 m.m.	N_2	12 mm
ZE/RG/600/AM MOD - 5/AM MIGHTY/ZAR	10 TO 40	2.5 MA	600 m.m.	N_2	15 mm
ZE/RG/ZEUS MOD-4/VARIANT	20 TO 120	5 MA	600 m.m	N_2	50 mm
ZE/RG/ PHANTOM	30 TO 120	2.5MA	450 m.m.	N_2	50 mm
ZE/RG/AM RAIL GUN MOBILE	10 TO 40	500KA	305m.m.	N_2	25mm
ZE/RG/AM ZAR/FUSION	20 TO 50	750KA	305mm	N_2	50mm

SPECIFICATIONS FOR THE MODEL ZE/RG/101/AM RAIL-GAP SWITCH

ITEM	PARAMETER	SPECIFICATION
Dimension	Length	460mm
	Active switching length	305mm
	Width	
	Height	140mm
Environment	Dielectric	Air, SF_6, or oil
	Temperature	20^0 C to
	Altitude	0 to 8000 ft
	Relative humidity	5 to 95 percent
Output	Voltage range	10 to 100 kV
	Maximum peak current	700 k A
	Maximum charge tranfer	10 C
	Inductance	30 nH
	Jitter 1)	< 2.0 ns
	Lifetime [a]	5,000 shots at maximum duty
Trigger	Amplitude (maximum) [b]	100 k V
	Rate of rise (minimum) [c]	5 k V/ns
Dielectric gas (for 25 to 100 kV operation) Environment	Grade	Instrument of better
	percent N_2	99.8%
		<5 ppm hyderocorbons by weight
		< 1000 ppm other impurities by weight
		<5 ppm H2O by weight
		<1 ppm hydrogen flouride by weight
	Filteration	No particles >5 microns

(a) With proper maintenance
(b) Preferred trigger polarity is the opposite of that of the switch x-gap
(c) For lowest jitter

RAIL GAP REQUIREMENTS

Item	Parameter	Specification
External Operating Environment	Dielectric Temperature Altitude Relative Humidity	Air,SF_6 OR Oil 60 to 100°F (15to 38°C) 0 to 8000ft. (0 to 2500m) 5 to 95 percent
Dielectric Gas [d] (for 25 to 120 KV Operation)	Grade Percent argon Percent SF_6 Impurities Filtration	Instrument or better 85% + 0.0, – 0.5 By Volume 15% + 0.5, - 0. 0 By Volume <5 ppm hydrocarbons by weight <1000ppm other impurities by weight <5 ppm H_2O By weight <1 ppm hydrogen fluoride by weight No Particulates > 5 microns
Dielectric Gas (for 10 to 30KV Operation)	Grade Percent Oxygen Percent argon Impurities Filtration	Instrument or better 10% + 1.0,-0.0By Volume 90% + 0.0,-1.0By Volume <5ppm hydrocarbons by Weight <1000 ppm other impurities by Weight <5 ppm H2O By Weight <1 ppm hydrogen fluoride by weight. No Particulates >5 microns

Trigger	Amplitude (maximum)[b] Rate of rise (minimum)[c]	100KV 5 KV /ns
Output	Voltage range Maximum peak current Maximum transfer Inductance Jitter(1σ)	10 to 120KV[a] 750KA 10C 20nH <2.0 ns
Dimension	Length Active Switching Length Width Height	54cm 12 in.(30cm) 180cm 150cm

1) Switch Operation voltage range set at factory for one of the following:

a) 10-30 KV b) 30-60KV c) 60-120KV
d) 25-50 KV e) 50-100KV

2) Preferred trigger polarity is the opposite of that of the switch X-gap
3) For lowest jitter. House a cabinet of Gases & Trials.