

Data Sheet no. 3.62/6

## Chopping Multiple Spark Gaps, Type AFC

### Application

Chopping multiple spark gaps, type AFC, can be used for chopping of lightning impulse voltages between 20 kV and 3600 kV. The chopping can be realized at the front or at the tail of the impulse. They consist of a capacitively controlled series connection of single-sphere gaps. The stage voltage is 200 kV. The capacitive control divider serves as basic load for the impulse voltage test generator. Equipped with an optional low voltage (LV) capacitor, the chopping multiple spark gap can also be used as a voltage divider for the measurement of lightning impulses and alternating (AC) voltages.

### Design

The chopping multiple spark gaps, type AFC, consist of capacitor, glass-fiber-reinforced plastic (GRP) column, base frame with rollers, electrodes and an isolating ladder with mounted spark gaps. The adjustment of the gap space is effected by motor drive, which is controlled by key-switches of the operator device. The triggering signal from the control is transmitted to the ignition generator (see Data Sheet 3.18) of the spark gap via a fiber-optic link.

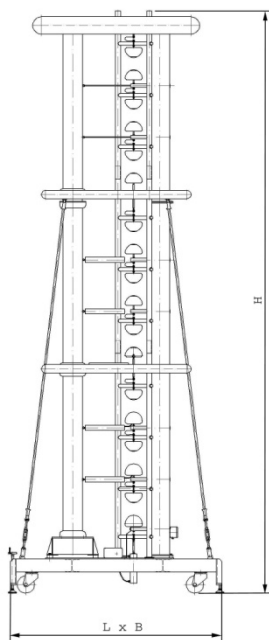


Fig. 1 Dimensional drawing of chopping multiple spark gap



Fig. 2 Chopping gap of a maximum chopping voltage of 1800 kV

Table 1: Technical Parameters

Type	For Test Systems Series <sup>1)</sup>	Maximum chopping voltage	Related to impulse generator	Number of stages	HV capacitance	HV damping resistance	Height H	Base frame Length x Width L x B	Weight
		kV	kV		pF	Ohm	mm	mm	kg
AFC 1330/600	L, M	600	400 to 600	3	1330	75	2630	1800 x 1475	385
AFC 2670/600	G				2670	45			
AFC 1000/800	L, M	800	600 to 800	4	1000	100	3335	1800 x 1475	410
AFC 2000/800	G				2000	60			
AFC 800/1000	L, M	1000	800 to 1000	5	800	125	3930	1800 x 1475	435
AFC 1600/1000	G				1600	75			
AFC 670/1200	L, M	1200	800 to 1200	6	670	150	4680	1800 x 1475	595
AFC 1330/1200	G				1330	90			
AFC 440/1800	M	1800	1400 to 1800	9	440	225	6630	2430 x 2050	1200
AFC 890/1800	G				890	135			
AFC 330/2400	M	2400	2000 to 2400	12	330	300	8600	3000 x 2500	1640
AFC 670/2400	G				670	180			
AFC 530/3000	G	3000	2600 to 3000	15	530	225	11300	3910 x 3500	2095
AFC 440/3600	G	3600	3200 to 3600	18	440	270	13260	3900 x 3500	2550

<sup>1)</sup> Higher or other maximal chopping voltages on request.

Duty cycle: continuous operation  
 Environmental conditions: temperature 0 to 40° C  
 relative humidity ≤ 90 %  
 altitude ≤ 1000 m  
 indoor operation  
 Reference conditions: 20° C; 11 g/m<sup>3</sup>  
 101.3 kPa

**Type Designation**

AFC a/b M

Technical parameter:

a capacitance in pF  
 b rated voltage in kV  
 M optional LV capacitor

Examples: AFC 800 /1000 is a chopping multiple spark gap of 800 pF and 1000 kV  
 AFC 670 /2400 M is a chopping multiple spark gap of 670 pF and 2400 kV with LV capacitor for voltage measurement

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