Data Sheet no. 5.41/2

Measuring Sphere Gaps

Types MKF

Application

A few decades ago, the sphere gap had been the most important and almost the only means for measuring high voltages. Today, voltage dividers with modern directly-indicating peak voltmeters or transient recorders characterize the H.V. measuring technique.
Today the measuring sphere gaps are preferably used for performance checks of HV measuring systems according to IEC 60 060-2: 1994.

Construction

HIGHVOLT supplies measuring gaps for peak voltages according to IEC 60 052: 2002 from 32 to 275 kV (sphere diameter 250 mm) in horizontal design and from 60 to 750 kV (sphere diameter 500 resp. 750 mm) in vertical design (see table). For higher voltages HIGHVOLT supplies sphere gaps on special request.

With horizontal design (type MKFW 25) one sphere is fixed on the support while the second sphere can be displaced manually by means of a micrometer gauge in an insulating tube. In order to avoid high-frequent oscillations and to prevent fomation of craters by burn-off of electrodes, two damping resistors 10 kOhm are included in the delivery set.

With vertical design (types MKF 50 and MKF 75) the lower sphere is adjusted by a remote controlled motor drive. Operation is effected by means of a control device wich can be supplied as a 19 inches plug-in unit for insertion into a control rack or a control cubicle. A measurand of the adjusted distance is transmitted to the control device and can directly be read there. Damping resistors are supplied on special request.

Measuring spark gaps are movable on wheels. Measuring spark gaps can be supplied on request with a triggering calotte and a triggering device with battery supply for the use as chopping gaps.

Technical characteristics

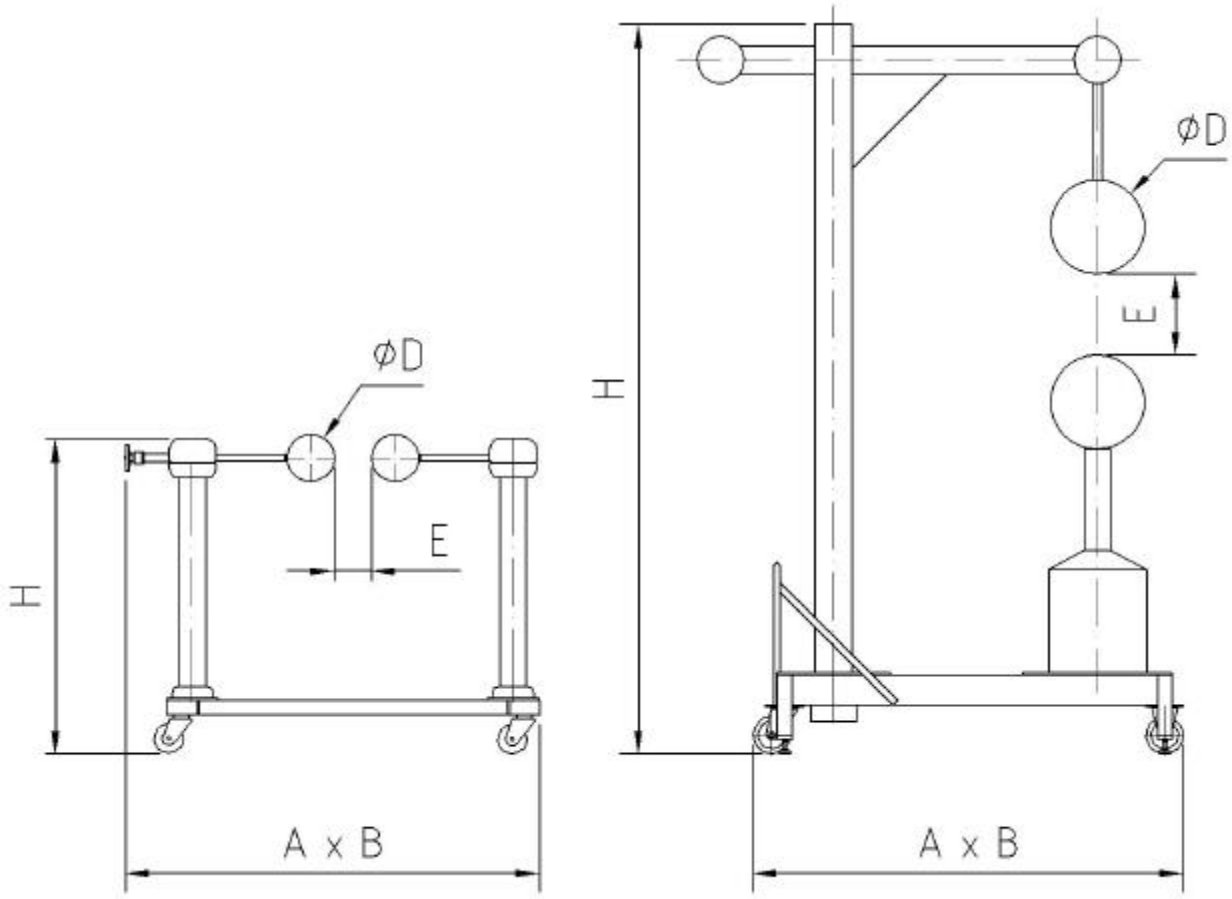
Type	Diameter sphere mm	Sphere distance mm	drive	Peak voltage according to IEC 60 052: 2002	
				A.C. voltage negative lightning impulse negative switching impulse D.C. voltage[3] kV	positive lightning impulse positive switching impulse kV
MKFW 25	250	10...125[1]...200[2]	by hand	32..275[1]..366[2]	32...300[1]...395[2]
MKF 50	500	20...240[1]...400[2]	by motor	59..515[1]..670[2]	59...570[1]...715[2]
MKF 75	750	20...360[1]...600[2]	by motor	59..750[1]..970[2]	59...785[1]...1020[2]

[1] Max. value according to IEC 60 052: 2002 within maximum uncertainty of measurement. [2] setable maximum value
[3] D.C. voltages should only be measured up to 135 kV, for higher voltages rod/rod gaps according to IEC 60 052: 2002 shall be applied. Supply of rod/rod gaps on request

Conditions for application Indoor

Ambient temperature	+5 to +40°C
Relative humidity	< 80%
Max. uncertainty of measurements according to IEC 60 052: 2003	A.C. and lightning impulse = 3% D.C. and switching impulse = 5%

Dimensions and weights



Type	A x B (mm x mm)	H (mm)	Ø D (mm)	E (mm)	Weight (kg)
MKFW 25	2195 x 750	1675	250	10...200	120
MKF 50	2285 x 1850	3875	500	20...400	590
MKF 75	2285 x 1850	4950	750	20...600	670

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