Data Sheet no. 4.6/7

HV Capacitors and Capacitive Dividers

Description:

High-voltage (HV) capacitors are necessary components in all Module Systems. They are available in different ranges of voltage and capacitance.
The capacitors C 01, C 03 and MCP 100 are used for AC voltage or partial discharge measurement.
C 10 enables the DC voltage generation. The capacitors C 10 and C 1 are used for the Impulse voltage generation.
The capacitors have a PD-free, liquid-impregnated paper or foil-paper insulation inside a GFR tube. The applied liquid is PCB-free. The thermal expansion of the liquid is compensated by means of special bellows.
A very high accuracy AC measurement can be performed with the compressed-gas standard capacitor MCP 100. Further information on the MCP 100 are available in the Data Sheet No. 5.31. Note that, contrary to the other capacitors, the compressed-gas capacitor MCP does not have to be completed by a junction element KE 1 and a base element FE 1.

Technical Data:

Environmental conditions: temperature 5 to 40° C
relative humidity ≤ 90 %
altitude ≤ 1000 m
indoor operation
(outdoor application and different parameters on request)

type code		**C 01**	**C 03**	**C 1**	**C 10**	**MCP 100**
capacitance	nF	0.1	0.3	1	10	0.1
rated voltage						
AC (50 / 60 Hz)	kV	100	100	100	100	100
DC	kV			135	135	-
PD-level at the rated voltage	pC	≤ 2	≤ 2	≤ 2	≤ 2	PD - free
dielectric		oil impregnated paper				SF_6
dimensions						
l	mm	648	648	648	648	
∅d	mm	98.5	98.5	98.5	140	
h	mm					947
a	mm					425
weight	kg	8.5	10	11	15	45

Dimensional drawing:

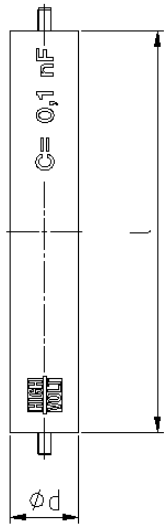

Fig. 1: C 01, C 03, C 1, C 10

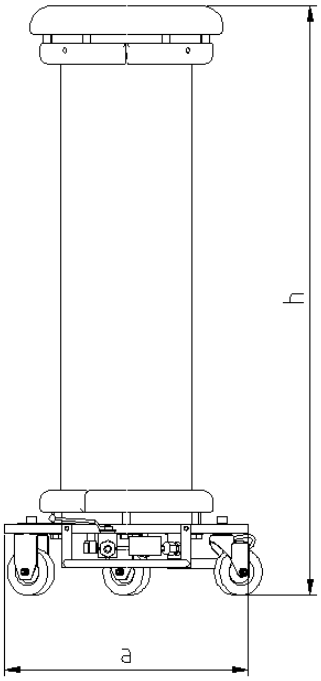

Fig. 2: MCP 100

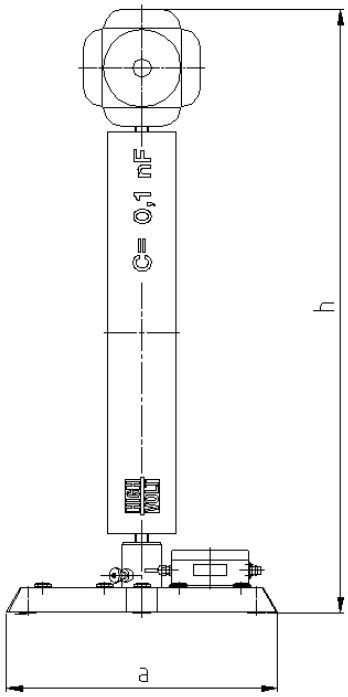

Fig. 3: WMCB…, SMCB…

Description Capacitive Dividers:

The Module System Capacitive Dividers are used to convert, the high AC voltages (up to 200 kV) or impulse voltages to a level of typically under 1000 V. This output voltage is measured by transient impulse recorders or by peak voltmeters.
Capacitive Dividers consist of the HV capacitor itself, a LV measuring branch (Data Sheet 4.27), the HV top electrode and a base element (Data Sheet 4.10). As HV top electrode a junction element (Data Sheet 4.10) is used. The LV measuring branch is arranged at the base element and can be connected directly by a coaxial measuring cable to a Peak Voltmeter type MU 17/ 18 (Data Sheet 5.56).
For voltages up to 200 kV it is possible to switch two HV capacitors in series. Two capacitors C 01 one above the other connected by a junction element KE 1 form the HV branch.

Technical Data:

Reference conditions: temperature 5 to 40° C
relative humidity ≤ 90 %

type code	AC voltage (rms) kV	LI voltage (peak) kV	divider ratio ü	type HV capacitor	type LV measuring branch	measuring uncertainty	dimensions (a x h) mm
WMCB 0.1 / 100	≤ 100		201	C 01	MC 20	< 2 %	436 x 972
WMCB 0.05 / 200	≤ 200		401	2 x C 01	MC 20	< 2 %	436 x 1983
SMCB 0.1 / 135		≤ 135	221	C 03	MCS	< 2 %	436 x 972

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