

Data Sheet no. 2.12/2

# DC Voltage Test Systems up to 2000 kV, Series K, Type GP.../...K

## Description

### Application

for isolation tests on dry or wet HV insulations with output currents of some 10 mA

### DC Voltage Generator

#### Circuitry

Multi-stage multiplier circuitry acc. to Greinacher

**Stage No-Load Voltage** 500 kV

#### Mechanical Construction

Four-column structure with a vertical rectifier column, example see Fig.1

#### Polarity Change-Over

automatically within some sec.,  
on request below 500 ms at reduced voltage

#### Discharging/Earthing

automatically and with additional earthing bars

#### Feeding

Voltage 230/400 V

Power max. 50 kVA

Frequency 50/60 Hz

#### Regulation Unit

power module with thyristor controller in a cubicle

#### HV Transformer

single-phase, cylinder-type HV transformer, type PE01, see Data Sheet 1.11

## Voltage Measurement

### Voltage Divider

resistive divider, 0.5 mA

### Peak Voltmeter

MU 18, see Data Sheet 5.56,  
integrated in the BG 5 G

Remark: For systems with fast polarity reversal mixed resistive capacitive dividers can be quoted.

### Control

Basic control BC 5 (Catalog Sheet 1.52) with operator device BG 5 G (Data Sheet 2.53). Operator device using SIMATIC components, separate buttons for the main switch, the operation switch and the emergency switch-off, contacts for warning lamps and safety loop.

Optionally, a Computer-aided Control and Measuring System CMS 22 or 23 (Data Sheet 1.52) with the related software GMS (Data Sheet 1.55) is available.

### Technical Data

For the nominal data and main dimensions of the standard types of DC voltage test systems series K see the table below.

### Type Designation

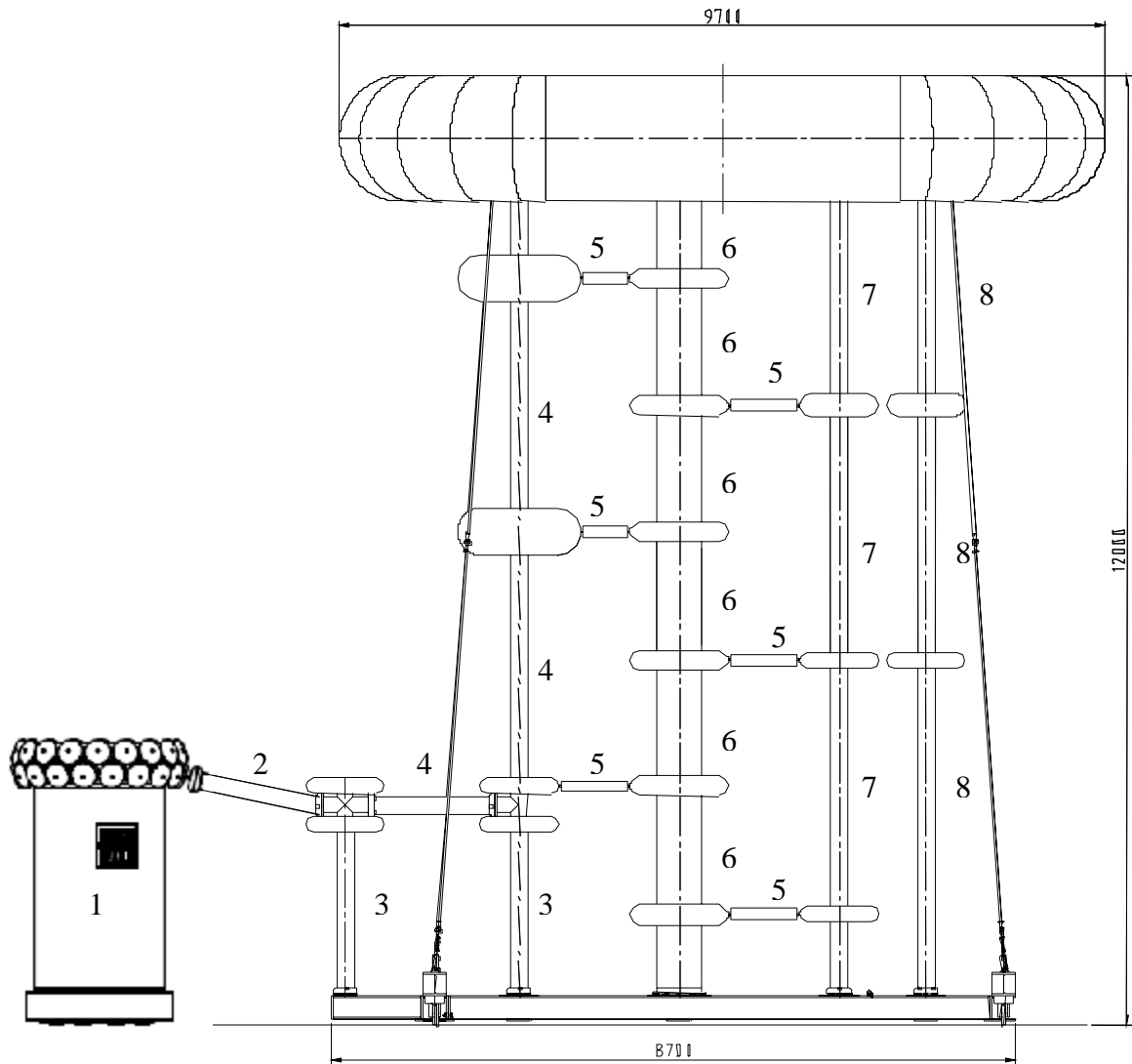
GP x/y K

x - Nominal current in mA

y - Nominal voltage in kV

K - Series

Type	Stage number	Nominal voltage	Continuous operation			Dimensions (without transformer)		Weight (without transformer)	Feeding
			Nominal current	at a voltage	with a ripple	Height	Floor area		
		kV	mA	kV	%	m	m x m	kg	
GP 50/ 500 K	1	500	50	500	< 3	5.6	5.5 x 2.5	2900	PEOI 100/220
GP 30/1000 K	2	1000	30	1000	< 3	8.8	7 x 4	5800	PEOI 100/220
GP 20/1500 K	3	1500	20	1500	< 3	12	8.5 x 5.5	8700	PEOI 100/220
GP 10/2000 K	4	2000	10	2000	< 3	15.2	10 x 7	11600	PEOI 100/220



- |   |                     |   |                           |
|---|---------------------|---|---------------------------|
| 1 | HV transformer      | 5 | Damping resistors         |
| 2 | HV lead             | 6 | Rectifier units           |
| 3 | Post insulators     | 7 | Smoothing capacitors      |
| 4 | Doubling capacitors | 8 | Resistive voltage divider |

Fig 1: Three-stage DC test system GP 20/1500 K ( $I_{DC} = 20 \text{ mA}$ ,  $U_{DC} = 1500 \text{ kV}$ , Series K)

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