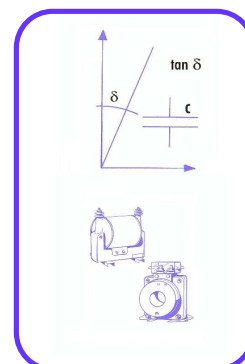
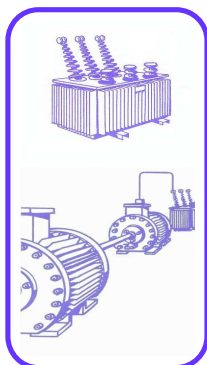


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**SF6 STANDARD CAPACITORS**  
**CG Type**  
**20 kV up to 800 kV application**



**FUNCTION**

- Standard reference value used for very accurate measurement of capacitance and dielectric dissipation factor (Tan  $\delta$ ) in high voltage
- Very accurate measurements from some Volts up to over 800 kV as a reference & additional characteristics available in other Vettner Standard Capacitors ranges
- Calibration / Traceability linked to BNM Channel / LNE French National Laboratory

**APPLICATIONS**

- HV Standard Capacitor for capacitance & Tan delta measurements,
- HV standard Capacitor for very accurate capacitive voltage divider,
- HV standard Capacitor as coupling capacitor in Partial Discharges measurements
- Manufacturers, repairers, maintenance of all HV insulated equipments (Cables, transformers, generators/alternators, bushings, oil, impregnated paper...)
- Production, transmission and distribution of energy on national grid networks or local (including internal networks of industries)

**CG RANGE BENEFITS**

- Very high accuracy technology
- Operating simplicity
- Fast measurement
- Total safety of operator
- Reliability
- Sturdiness
- No maintenance
- Easy check of calibration
- Convenient and simple calibration



**STANDARDS**

- Conformity to IEC 76, NFC 52 Standards

**QUALITY**

- of Manpower
- of Know-how
- of Procedures
- of Components

**ACCURACY**

- High accuracy of measurements
- Stability of components

**CALIBRATION**

- Primary Standards linked to LNE
- Traceability

**WARRANTY**

**2 YEARS**

**AFTER SALES SERVICE**

**10 YEARS**





# SF6 STANDARD CAPACITORS

## CG Type

### 20 kV up to 800 kV application



### PRINCIPLE

- Vettiner CG type standard capacitors original design consists in two concentric cylinders.
- An external electrode (AE on scheme) receives HV from top of capacitor.
- A measuring electrode (AI on scheme) is connected to Cn measuring terminal. A second measuring electrode can be added (10 pF or else) (It is not necessary with Schering bridge structure for Voltage reading)
- A guard electrode (AG screen) separated from measuring electrode is linked to guard terminal and allows tests with separated guard from ground
- Temperature coefficient of capacitance is lower as possible thanks to selected materials' performances.

### MAIN CHARACTERISTICS

- Dielectric Gas used : SF6
- Gas operating pressure : 1 bar up to 6 bar (0.6 Mpa)
- Pressure coefficient  $\Delta p/p$  :  $+ 2.2 \cdot 10^{-3} / \text{bar}$
- Temperature coefficient  $\Delta c/c$  :  $\# + 2 \cdot 10^{-5} / ^\circ\text{C}$
- Pressure / temperature  $\Delta p/c$  :  $\# 0.03 \text{ bar} / ^\circ\text{C}$
- Operating temperature range :  $- 20 ^\circ\text{C}$  up to  $+ 70 ^\circ\text{C}$
- Operating hygrometry : up to 80 %
- Dissipation factor of C (Tan  $\delta$ ) :  $\leq 1.10^{-5}$  ( $\leq 10 \text{ ppm}$ )
- Voltage Coefficient  $\Delta c/kV$  :  $< 10 \text{ ppm} / \text{kV}$
- Partial Discharge level :  $\leq 2 \text{ pC}$  ( $\leq 200 \text{ kV}$ )  $\leq 5 \text{ pC}$  ( $> 200 \text{ kV}$ )
- Accuracy when used as divider :  $0.1 \% \text{ rdg.} \pm 0.03 \%$
- Accuracy of calibration of C :  $0.02 \% \text{ rdg.} \pm 0.01 \text{ pF}$
- Stability : Variation  $< 0.05 \% / \text{year}$

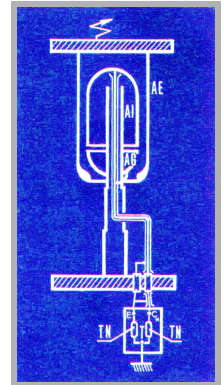
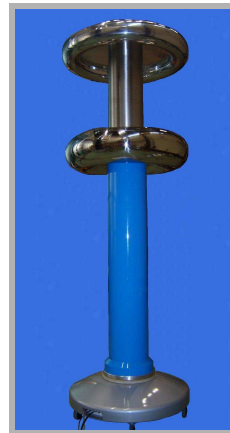


Illustration of Vettiner HV SF6 Standard Capacitors - CG Range

### CG RANGE TECHNICAL SPECIFICATION

Main CG range standard capacitors (Other values of rated voltage or/and rated capacitance possible on simple request - Just contact us !)

PARAMETERS	20 kV to 50 kV (Portable units)			50 kV to 150 kV (Without anti-Corona ring)			200 kV to 400 kV (Single anti-Corona ring*)					500 kV to 800 kV (Double anti-Corona ring*)		
Vettiner reference	CGP 02	CGP 03	CGP 05	CG 05	CG 10	CG 15	CG 20	CG 25	CG 30	CG 35	CG 40	CG 50	CG 60	CG 80
• Rated Voltage RMS (kV)	20 kV	30 kV	50 kV	50 kV	100 kV	150 kV	200 kV	250 kV	300 kV	350 kV	400 kV	500 kV	600 kV	800 kV
• Rated Capacitance (pF)	100 pF	100 pF	100 pF	100 pF (or 50 pF or 1000 pF)	100 pF (or 50 pF or 1000 pF)	100 pF (or 50 pF or 1000 pF)	100 pF (or 50 pF or 1000 pF)	50 pF (or 100 pF =CG25-100)	50 pF (or 100 pF =CG30-100)	50 pF (or 100 pF =CG35-100)	50 pF (or 100 pF =CG40-100)	50 pF (or 20 pF =CG50-20)	50 pF (or 20 pF =CG60-20)	50 pF (or 20 pF =CG80-20)
Dimensions														
• Height (mm)	600 mm	600 mm	600 mm	650 mm	880 mm	980 mm	1300 mm	1600 mm	2300 mm	2800 mm	3200 mm	3900 mm	4400 mm	6000 mm
• Base diameter Ø (mm)	200 mm	200 mm	200 mm	490 mm	490 mm	600 mm	700 mm	700 mm	900 mm	1200 mm	1200 mm	1800 mm	2000 mm	2500 mm
• Head diameter Ø (mm)	200 mm	200 mm	200 mm	210 mm	230 mm	270 mm	650 mm*	650 mm*	750 mm*	1000 mm*	1000 mm*	1600 mm*	1600 mm*	2000 mm*
• Weight (kg)	14 kg	14 kg	14 kg	24 kg	35 kg	60 kg	80 kg	100 kg	180 kg	270 kg	440 kg	650 kg	760 kg	1200 kg

Note : Above technical characteristics may change without any notice

\* Diameter of anti-corona ring

### MEASURING INSTRUMENTS

Portable units: Special safe transportation case →



- With standard capacitors, Vettiner proposes a complete range of measuring instruments and accessories according to expected tests



Schering Bridges - Digital loss factor analysers - Schering Alberti Bridges

### OTHER STANDARDS

- For additional possibilities, don't forget also to think to other Vettiner Standard Capacitors : (From some hundred Volts up to 800 kV)



CA range

CP range

CS plates range

CG plates range