

# Standard Capacitors

## Testing Applications

Phenix Technologies' standard compressed gas capacitors (SC series) are designed to be high precision and stable high voltage reference capacitors with a very low loss factor. With these characteristics, the SC series capacitors are ideally suited for capacitance and tangent delta measurements, transformer ratio testing, and precision AC voltage measurements.

## Design Features

The SC series capacitors are comprised of a high voltage electrode, a measurement low voltage electrode, a shielding electrode, and a ground electrode arranged coaxially in an insulating fiberglass cylinder. The cylinder is filled with SF6 gas at approximately 4 bar (58 psi). A gas filling valve, gas pressure gage, and electrical connection are located at the base of the cylinder.

In order to minimize proximity effects, the measurement electrode is surrounded by the shielding electrode. The physical arrangement of the electrodes effectively reduces the effect of stray capacitances to zero. The SC series capacitors are designed for corona free operation. The capacitor is equipped with Lemo and Dilo style connectors and gas fittings.



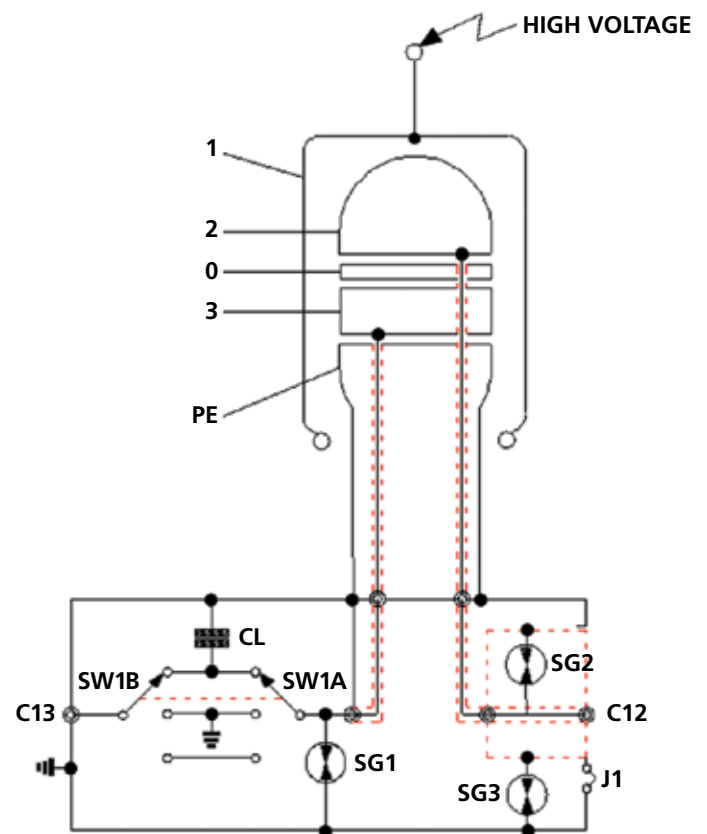
Model	SC50-100	SC100-100	SC200-50	SC300-50	SC400-50	SC600-20	SC800-20
Voltage	50 kV	100 kV	200 kV	300 kV	400 kV	600 kV	800 kV
Capacitance	100 pF	100 pF	50 pF	50 pF	50 pF	50 pF	50 pF
Height [mm]	580	1040	1580	2600	3350	5500	7500
Base L [mm]	200	450	600	1200	1800	2000	3000
Base W [mm]	200	450	600	1200	1800	2000	3000
Weight [kgs]	14	36	69	180	440	750	1850
Dissipation Factor	$\leq 1 \times 10^{-5}$	$\leq 1 \times 10^{-5}$	$\leq 1 \times 10^{-5}$	$\leq 1 \times 10^{-5}$	$\leq 1 \times 10^{-5}$	$\leq 1 \times 10^{-5}$	$\leq 1 \times 10^{-5}$
Stability	<0.05% year	<0.05% year	<0.05% year	<0.05% year	<0.05% year	<0.05% year	<0.05% year
Temperature	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C

## Option

As an option, the capacitor can be equipped with an additional auxiliary measurement electrode; this electrode can be used in conjunction with the low arm capacitor as a precision voltage divider.

## Transportation

Each capacitor is shipped with an internal gas pressure of 1 bar (14.5 psi) and a fill kit for on-site pressurization.



- 1 High Voltage Electrode
- 2 Measurement Electrode
- 0 Shield Electrode
- 3 Auxiliary Electrode (optional)
- PE Ground
- C12 Connection for capacitance and tangent delta measurement
- C13 Connection for voltage measurement (optional)
- CL Low Arm Capacitor (optional)
- SW1 Low Arm Selector Switch (optional)
- J1 Jumper to ground (removable)



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